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THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly

AFTERMATH IN NORTH AFRICA: PRISONERS AS FAR AS THE EYE CAN SEE—AND ALL ITALIANS! Part of the 12,000 who left Tunisia recently waiting to embark for an overseas destination where they will be interned for the duration

The full tally of prisoners taken in North Africa is now known in its completeness. Mr. Churchill has stated that the number who have passed through the cages of the Allies now amounts to over 248,000 men: there must certainly have been 50,000 of the enemy killed, making a total loss of about 300,000 men during the final stages of the Tunisian campaign alone. In addition, a goodly number of Axis prisoners were taken at the Mareth Line and thereabouts: so that the haul was not inconsiderable! The thousands upon thousands concentrated in Tunisia after the capture of North Africa are now filtering through to new camps and bases from the temporary compounds in which they were concentrated whilst the Axis remnants were being mopped up. More than 12,000 Italian prisoners left North Africa recently for "another place"—and here a portion of them are seen on the quayside waiting to embark

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A WAR NEWSLETTER—No. 198

1, NEW OXFORD STREET, W.C.1.

Gas : Reprisal Warnings.—

The President deemed it necessary to issue another warning to Germany and the Axis that the Allies would reply in kind instantly to any use of gas. These repeated warnings are puzzling and interesting. The Democracies have no need to seek topics for public pronouncements. They have always found plenty to talk about. There can be but one explanation—that new evidence is to hand, and good evidence, too, that the Axis is once more toying with the idea of one more breach of the conventions of civilised warfare—one more desperate gamble in barbarity from which their wretched peoples will reap the whirlwind of reprisal as they are reaping it in the field of bombing. We have not a remote idea whence this evidence comes nor where the horror may be released. But we can be sure that the Allied chiefs regard the evidence as worthy of attention, otherwise these repeated warnings would be merely silly. We do not believe that the Nazis still doubt our state of mind, or still dream that we are soft and hesitant and sentimental in the waging of war. Our bombing must have proved our inexorable resolution to take two teeth and two eyes for every one taken from us. We have plenty of nasty poisons which we hope will never be used. And the German people, who pay the price of Hitler's bright ideas in bestiality and strategy, must by now tremble at the prospect of his latest inspiration. Their inability to kill his bright ideas, which have such swift and boomerang reaction in punishing them, is the measure of their present enslavement. Their success in strangling this bright idea of his at birth would be a proof that the German people had won back at last a measure of their former freedom—and common sense (not to say made a little progress towards decency).

MR. CHURCHILL'S VISIT TO THE FIRST ARMY IN AFRICA : During his stay in Tunisia, Mr. Winston Churchill (accompanied by Mr. Anthony Eden) paid a call on the First Army in and around Tunis. He was met by Lieut.-General Anderson at the airfield and driven out to the old Roman Amphitheatre at Carthage. Here the Prime Minister was given a great reception by thousands of British soldiers, whom he addressed and thanked for the victory of North Africa. He afterwards visited Tebourba and Djedeida, where some of the Tunisian battles were fought. In the above picture Mr. Churchill is seen leaving the Roman Amphitheatre in company with Lieut.-General Anderson

Innocent Areas. —

I judge that the Dons were surprised and jolted by the cool reception of their first gesture to outlaw bombing. They were disagreeably surprised to discover that, short as human memory is, it is not so short as they supposed. People, all the world over, can still recall yesterday's insults, and barbarities committed "only the other day." In theory, how excellent, how noble (but how all too late in practice) was that gesture (for it was no more) to outlaw bombing which may cause death and loss to innocent civilians. Who would not outlaw it to-day if it could be done ? And, in theory, how sound the plan to label the territories of the combatants as innocent zones, semi-military zones and totally military zones. The Dons did not invent the plan. In 1939 I put in a humble plea for an area to be neutralised against bombing in every combatant country, to be freed of all military activities, from munition works, radio stations, military camps, aerodromes, even to trunk railway lines ; such zones to be kept as havens and refuges for the old, the sick and the young, and to be invigilated by neutral commissions. My little effort at humanity was printed, and perhaps read, and smiled at and forgotten. No doubt it was too late in 1939. It might have been possible to secure by convention (which the Nazis would have broken) in 1935. But in 1943 ? With "neutrals" sadly to seek. With hate and vengeance at boiling-point ? With every combatant worked to death ? With military objectives jostling on every acre of combatant territory ? With *our* memories of what *we* had to suffer ? It would take every Spaniard and every Swede to recruit the necessary invigilating committees, after the Augean task of cleaning up the zones or havens had been accomplished by a miracle. A gesture indeed, and a not very ingenuous or worthy gesture.

In the Lull. —

In the lull before the storm, which every combatant and neutral nation confidently expects to break in Europe any day, there is one element at least wherein activity never relaxes, but rather grows. Nay, two. On the seas we never expect relaxation and we never get it. While, therefore, there is a lull on land and the everlasting struggle in the oceans, in the air the battle of the Titans reaches new peaks of intensity. It is all a great puzzle to the ignoramus. From Russian statistics, he might well deduce that the air power of Germany of late has been bled white, as it was bled white during the phases of the battle of Tunis. And he might ask reasonably, using the yard-sticks of the history of air warfare in this war, how long can any nation endure such a daily toll ? If our Mediterranean air campaign to soften the "underbelly" and make safe the Narrows is more easily appreciated by the ignoramus at home, many other mysteries of the air afford him speculation. There has been an interesting lull in the British assault on German war centres. It coincided with the period of no moonlight—the beginning of June. Time was when bombers found such periods the best for their sorties, and the least dangerous to the raiders. That phase seems to have passed. Nowadays, the big blitzes employ the periods of full moonlight, and in our assaults on Germany the public expects a lull at the waning of the moon. Whether the German public views such lulls as proof that Sir A. Harris has outrun the constable and is panting for breath, we do not know. No doubt they clutch at a straw, as we were wont to do in 1940. There may be other explanations of our own (or the enemy's) periods of ca'canny, besides lack of moonshine. Air warfare is still the public's prime ignorance in all countries, and mystery and moonshine make up the tale of our knowledge.

The Tories.—

Lord Selborne clings to a very ancient political party label. In reviewing the immediate aims of the Conservative party in the planning and building of a better Britain and world, he pulls out that tattered and dusty label, the Tory party. All political labels, I agree, are tattered and obliterated, more or less. The Conservative label documents a dose of pure and unadulterated, if fairly sane, socialism (1910 brew). The "Unionist" label speaks to a half-forgotten page in history. "Liberalism" once meant something fairly new and quite hopeful. It is a meaningless term to-day in a world of elasticity and broadening in politics — as meaningless as the term Whig, from which it was a branch-off by adherents who realised the deadness of Whiggism a century ago. But, if Whiggism became a meaningless term in 1840, how remarkably dead is the term Tory in 1940 ! For, indeed, what connection has any political party to-day, concerned to build a better Britain, with that party which opposed the Revolution of 1688 and the Reform Bill of 1832 ? And what hand should an "Irish robber" play in re-establishing the reign of law and peace, restraint and brotherhood, in these realms and this commonwealth of ours ? Little, indeed. No ; all our political labels should go to the salvage bag, for all are waste paper. But "Tory" first of all. For that label is more than anachronism. It is simply silly. (And, incidentally, the "Labour" label is fast qualifying for the same category.)

Wanted — a Witness.—

Some months ago, when the new austerity of life was foreshadowed, I wrote a prophetic note on some of the legal safeguards of civilised life which were already proving unworkable under war conditions. I think my note was crowded out and did not appear in print. One instance which I remember to have given was the swearing by competent witnesses before a Commissioner of Oaths of a certificate for an administration of an intestacy. I pointed out how impossible it had become for an uneducated person in a remote village to find two "competent" men (of defined categories) in his area capable of going on the same day at the same hour by any available means of transport to swear and sign before a Commissioner in the nearest town. I thought the rule should be relaxed for the war in favour of attestation by or before a J.P. or clergyman. Here 's another even more revealing instance of the new austerity which so impressed Mrs. Roosevelt in certain rural areas she visited : I am a trustee of a settlement. Some stock is to be redeemed. I am sent a trustee's declaration, requiring a witness to my signature. Not so easy. I live very private and remote. I no longer have any servants left me. My gardener has been called up. My wife is not competent to witness my signature. My nearest neighbours are, like all of us, busy and often away. There is no petrol for any but authorised trips. I must store up this document until I meet a competent witness. That means I must carry it on my person perhaps for days. Austere, isn't it ? Generally, but not in particular, how inelastic and unsympathetic is Authority revealed ! Our lives grow more and more complicated and difficult, inevitably, even as "life" grows more simple. It is all a multiplication and elaboration of forms ; never, never a simplification of forms to keep pace with the simplification of life and the essential needs of life. *Trust nobody*—that is the slogan. Flatter (but never trust) the people—and, above all, do nothing to ease their complications when calling on them for a still greater effort. There is plenty of warfare ahead of us yet. The time is overripe for one more Government Committee—to examine means of simplifying legal forms and safeguards, ancient and modern, including those affecting income-tax and rationing of essential supplies, and all the hundred certificates, applications, demands, instructions and requirements which make the life of the average business man and householder a heavier nightmare than it need be. Any simplifications discovered and recommended will be worth examination by the Government. For at this hour the redundancy of forms cripples the war effort and will cripple the peace effort also.

To Hoe or No ?—

Keep your hoe going these days. Elizabeth and Margaret weekly confirm this advice to amateur gardeners which for generations professional gardeners—the most obstinate, cocksure, conservative tribe—have inculcated and practised. And now *The Times* has unloosed a bomb on the cabbage patch and ordered the scrapping of the hoe. One of the few features of war which have kept me my power to smile has been the constant discoveries of scientific men that the maxims of peace were mostly error, that what we can't eat or do in war was mostly bad for us, and that 100 per cent. virtue lies only in those things we still can eat and do. There 's a fine philosophy, of course, in these iconoclasms (e.g., carrots have twice the vitamin content of oranges, broccoli leaves have more vitamin content than all the bananas in Jamaica). And so with the hoe. There is no time to hoe. *Ergo*, hoeing is definitely unnecessary. A scientist has discovered that soil does not, after all, develop "pockets" which must be broken up to prevent evaporation of moisture, that hoeing weakens the plants more by cutting their roots than do the weeds round them by sharing the value of the soil foods. And more : the mulching value of those weeds is high and exceeds their nuisance value as drainers of the virtues in the soil. So send your hoes to the dump and watch your cabbages swelling among the nettles and shepherd's-purse. Leave all to Nature. Let her rip.

THE OLD STAGER

MALTA AGAIN A BATTLE CENTRE

THE FIRST BOMBS FOR SIX MONTHS FALL ON THE ISLAND, but the enemy formations which dropped them were broken up by the fighters based on the island's airfields

Bombed by the enemy, but now hitting back hard in the Mediterranean

—Two striking new pictures

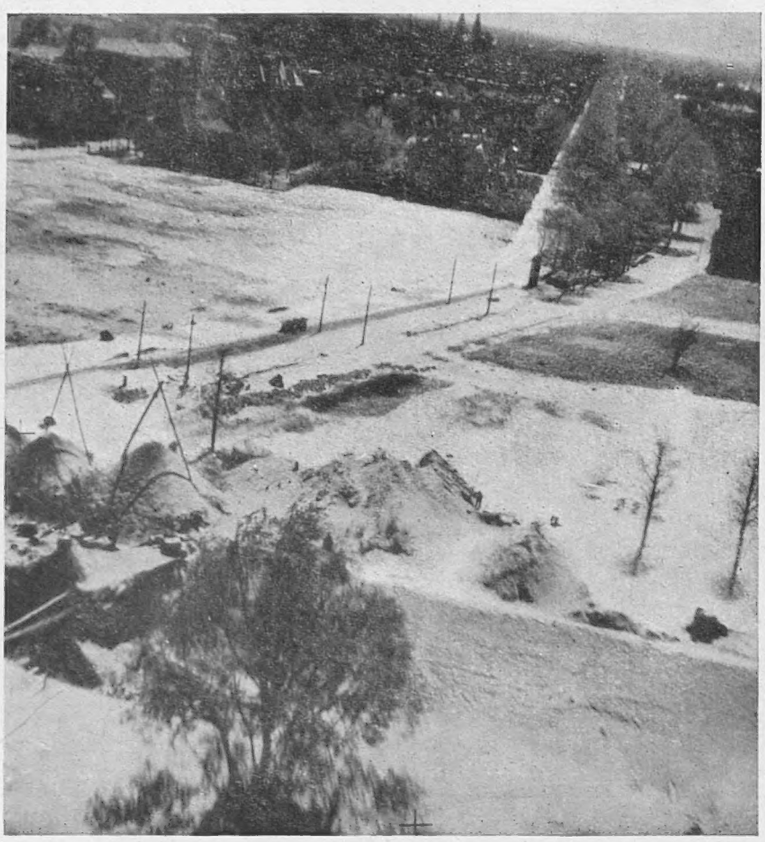
Now that the German and Italian armies have been driven out of North Africa, and with the "Siege of Malta" by the Axis a now-distant memory, the George Cross Island is hitting back hard at the Germans and Italians in the Western Mediterranean. Malta's full strength in the air is being turned daily against enemy strongholds and bases in Sicily, Sardinia, Pantellaria and elsewhere, as well as against their shipping communications with the mainland of Italy. Night and day long-range Beaufighters are keeping up a steady offensive, co-operating with our other air and naval forces against ships, airfields and railways.

As if in revenge for the great damage inflicted in Southern Italy and the Tyrrenhian Sea and other places, for the first time since December 1942, bombs were dropped on Malta a few days ago in an early morning raid. About thirty-five aircraft—F.W.190 bombers, with an escort of Me. 109's—took part in the attack. Our fighters intercepted the raiders before they reached the coast and broke up the formations. A few bombs were dropped on the island, causing slight casualties: two F.W.190's and Me. 109's were damaged. In the picture above, early morning crowds are seen on Malta queueing up for the buses: in the background the bomb-smoke is seen curling upwards

BRITISH BEAUFIGHTERS BASED ON MALTESE AERODROMES ARE NOW HITTING HARD AT THE ENEMY'S STRONGHOLDS IN THE MEDITERRANEAN during the present great offensive by sea and by air. One of these fine fighting aircraft is seen flying along the shores of the island on its way to hit the Axis in the vital Sicilian Narrows, where the greatest damage has already been wrought by the Allies' ships and planes

THE AXIS PREPARE FOR OUR INVASION

Remarkable pictures which show the extreme steps taken by the Germans and Italians in the defence of their vulnerable and lengthy coastline



ANTI-INVASION STEPS AT THE HAGUE. In the left background (beyond the road) is the site of a large building which has been razed to the ground by the Germans: in the foreground is a portion of the 65-ft.-wide tank ditch which is to be filled with water. This is a part of the great defensive strip blasted by the Germans through The Hague and shown in greater completeness in the big aerial view reproduced on the right

A REMARKABLE AERIAL VIEW OF THE HAGUE, IN HOLLAND: area immediately to the right of the irrigation canal (on the Cross Hospital;

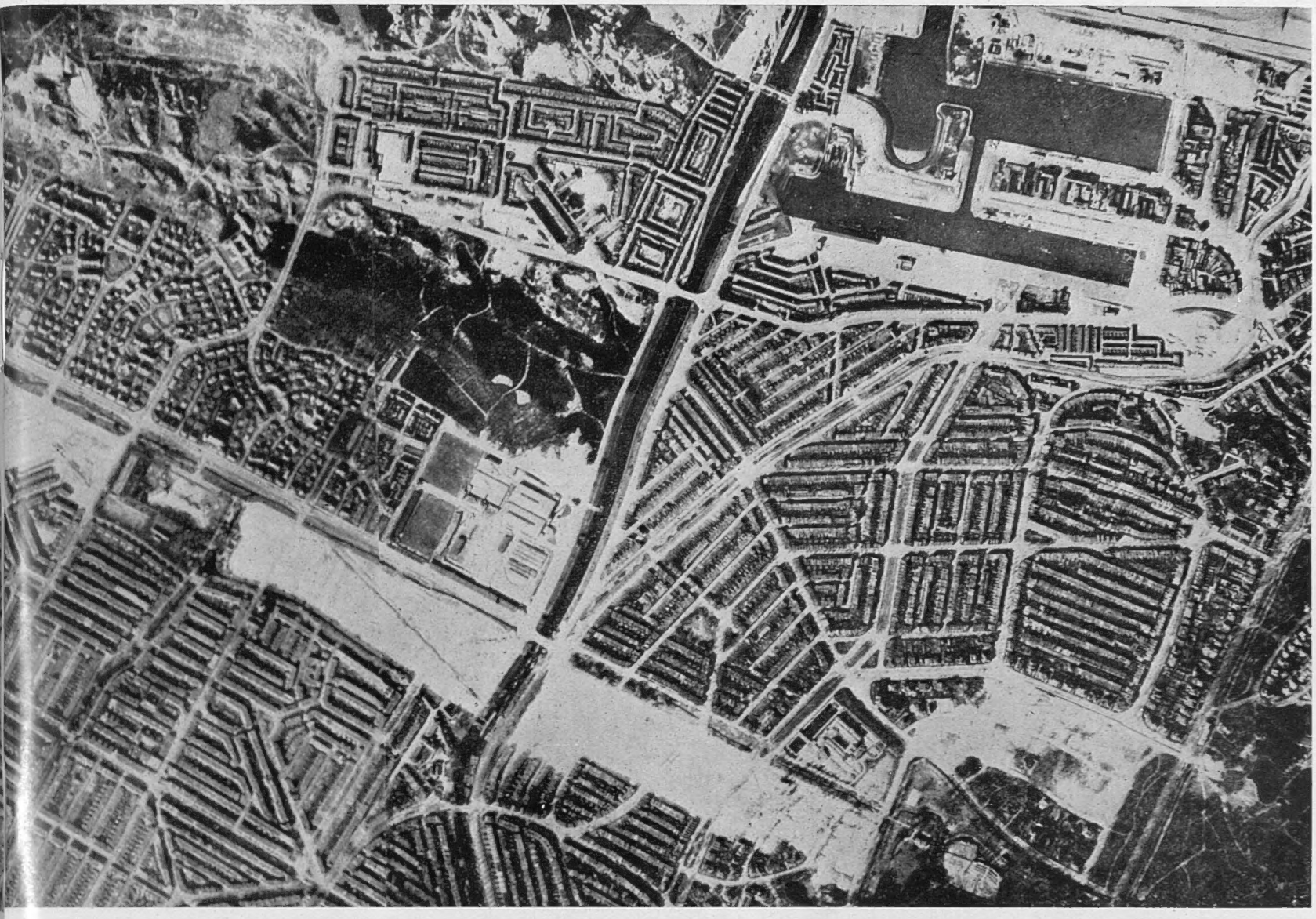
That both Germany and Italy are now suffering badly from invasion "jitters" is well known throughout the rest of Europe. Hitherto, we have been told repeatedly that both countries feel quite secure behind the ramparts they have thrown up all along the occupied coast, but the evidence now in the possession of the Allies does not confirm these propaganda statements. Feverish work of a defence nature has been reported from all parts, and the strengthening of the walls of the "Fortress of Europe" proceeds apace as the moment for the

ON THE CHANNEL COAST: A German patrol, at an obvious peacetime pleasure resort, marches beside a brick-built "defence wall," which is one of the enemy's publicised deterrents to a British sea-borne landing

IT IS THE TURN OF THE GERMANS TO BE ON THE LOOK-OUT NOW! A German coastguard beside an anti-aircraft gun on the French Mediterranean coast

ANOTHER DEFENCE WORK ON THE CHANNEL COAST: Walls of reinforced concrete (which suspiciously resemble air-raid shelters) and barricades of steel and barbed wire, which form part of the "West Wall" in Occupied France

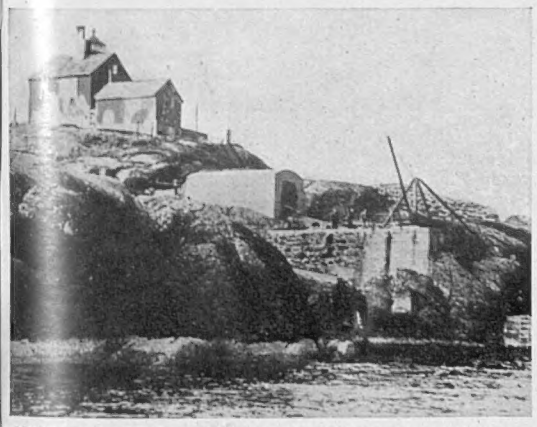
FOREIGN JOURNALISTS SEE THE ATLANTIC "WALL," when they "were given an opportunity to see the fortifications of the huge German defence line along the Channel coast"



TAKEN ON MARCH 13, 1943, AND RELEASED FOR PUBLICATION RECENTLY. A great swath has been cut through the town as an added anti-invasion measure. The extreme right of the picture) was once the site of a large building; in the centre, the dark area amidst the light-coloured, blasted strip was the site of the Red the section at the extreme left end of the devastated strip was where a large public school once stood

Allied invasion draws near. The impressive picture reproduced above, for instance, shows what has been going on behind the fortified coast of Holland. The picture was taken by reconnaissance aircraft on March 13, but has only recently been released for publication. It shows how the Germans have blasted a second line of defence, to reinforce their much-vaunted "West Wall," right through the very centre of The Hague. This line is about 1½ miles inland from the sea and is almost parallel with the coastline (which is just beyond the picture above, but which may be glimpsed in the smaller picture in the upper left).

A belt of public buildings and flats has been demolished in order to give the German guns an unobstructed firing range. A 65-ft. tank ditch has been dug, and gun emplacements have been constructed. The area where the Germans used demolition methods to clear the way for the defensive strip is approximately 700 ft. wide and 3½ miles long. The Netherlands Government—source for both pictures and information—says that more than 100,000 people have been evacuated from The Hague alone as a result of these invasion preparations



GERMAN COASTAL-DEFENCE WORKS on a small rocky island off the Norwegian coast near Bergen, ready for Allied landing attempts

IN THE FAR NORTH: A German medium-calibre gun "ready to repulse any Soviet landing attempts in the Arctic Sea"

FORTIFICATIONS ERECTED BY THE ITALIANS ON THE "FORT-ISLAND" OF PANTELLARIA. These defence works were erected on a rocky spit of land to guard the island which lies midway between Tunisia and Sicily. Pantellaria was almost obliterated by the blows rained on it from the air and from the sea

BRITAIN'S BIG SHIPS IN THE MEDITERRANEAN: HERE ARE THREE OF THE POWERFUL NAVAL VESSELS WHICH ARE REPORTED TO BE AMONGST THOSE 33,950-ton battleship "Rodney" firing her 16-in. guns; with her, nearest the camera, is the 8,000-ton British cruiser "Newfoundland," of the Mauritius to give battle to the Italian Fleet if it should be ordered out of harbour for anti-invasion

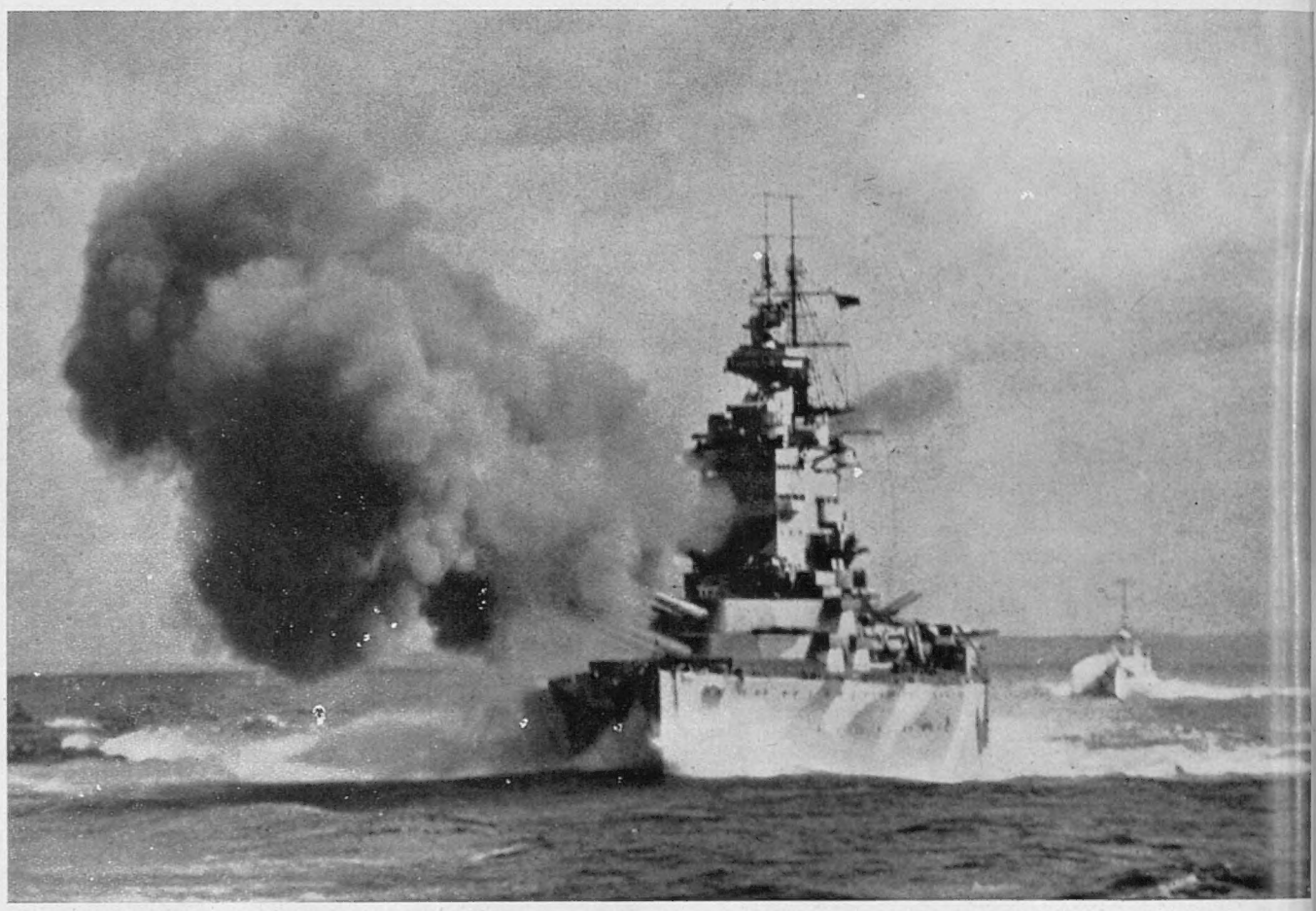
THE ROYAL NAVY READY FOR THE ITALIAN FLEET

Some Recent Official Pictures of British Battleships and Aircraft Carriers

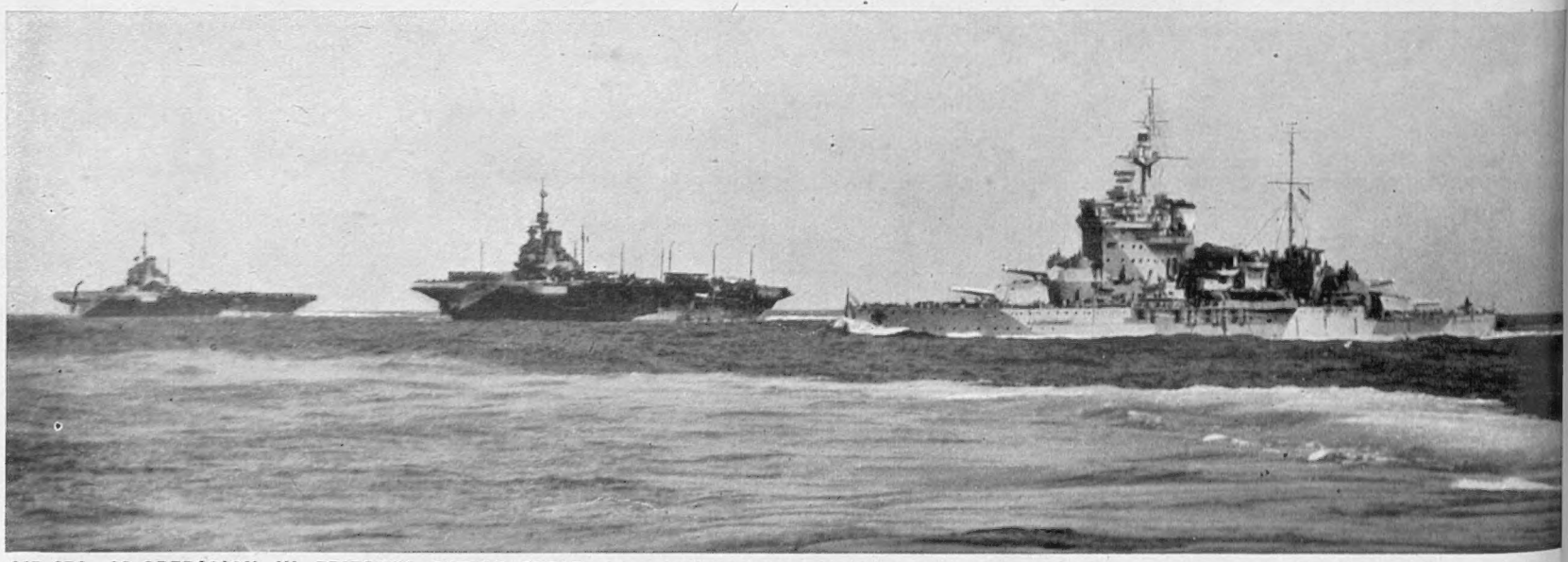
Now that affairs are boiling up against Italy, the exact strength of our naval forces in the Mediterranean would, naturally, prove of the very greatest interest to the enemy! It is perhaps for this reason that both Germany and Italy have been broadcasting a running commentary on arrivals and departures at Gibraltar—maybe with the idea of luring more exact information from us concerning our dispositions.

During recent days, great numbers of vessels—battleships, cruisers, destroyers, transports, tankers, etc.—have undoubtedly passed through the Gibraltar Straits. Some of them have been named, some have not. But that our concentrations of all types of vessels are large and widely disposed is not questioned.

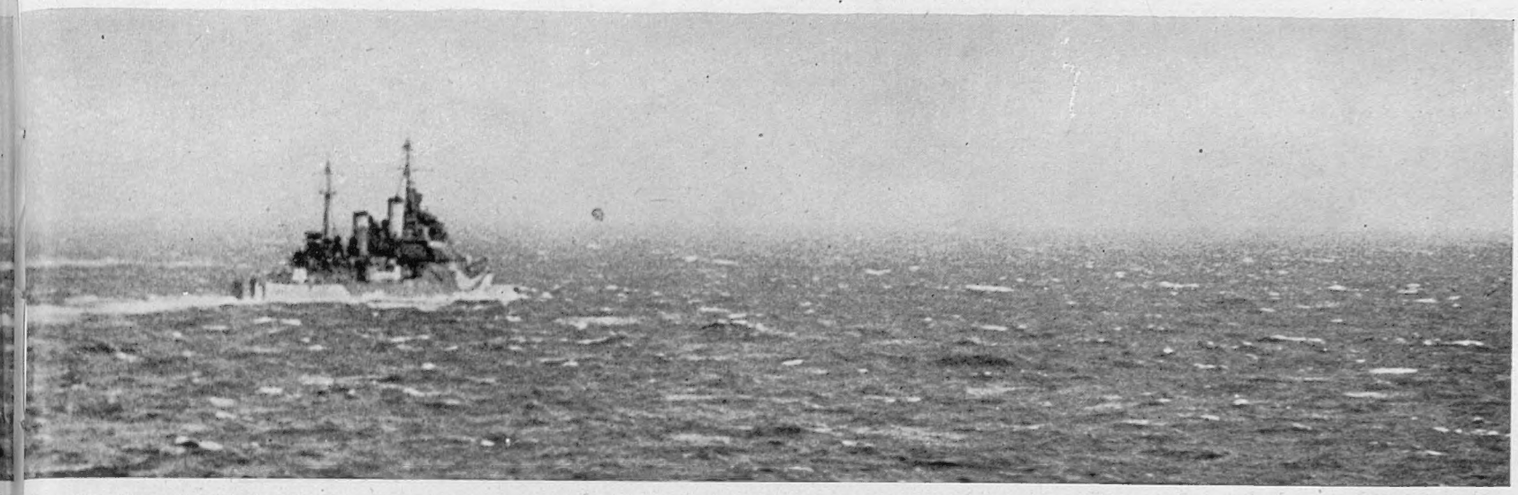
Many of the North African ports, newly acquired as a result of the Axis collapse in Tunisia, are being used for the necessary dispersal of our invasion fleet, if reports from various sources can be credited. The pictures reproduced on these pages show some of our bigger naval units: those that are reported to be in the Mediterranean are so described; the others may, or may not, be there, too!



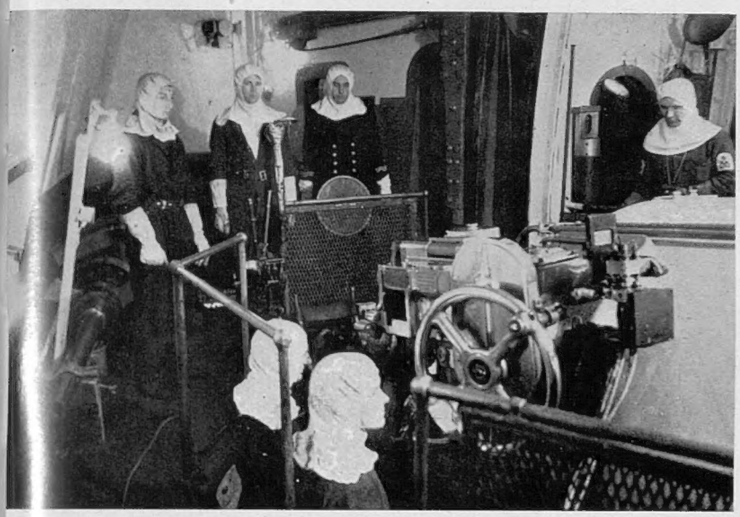
ONE OF THE GIANTS OF THE BRITISH NAVY IN THE MEDITERRANEAN. The 33,950-ton battleship "Nelson" fires her 16-in. guns, and the smoke darkens the horizon as the shells, each weighing one ton, hurtle from the massive turrets whose revolving weight above and below decks is about 1,500 tons—the weight of a modern destroyer! H.M.S. "Nelson" was launched in September 1925: she is 710 ft. long and carries a complement of 1,361. Her formidable armament includes nine 16-in. guns and a number of smaller weapons. She has a speed of 23 knots and cost just over £7,500,000 sterling to build. "Nelson" was one of the first naval vessels to mount 16-in. guns



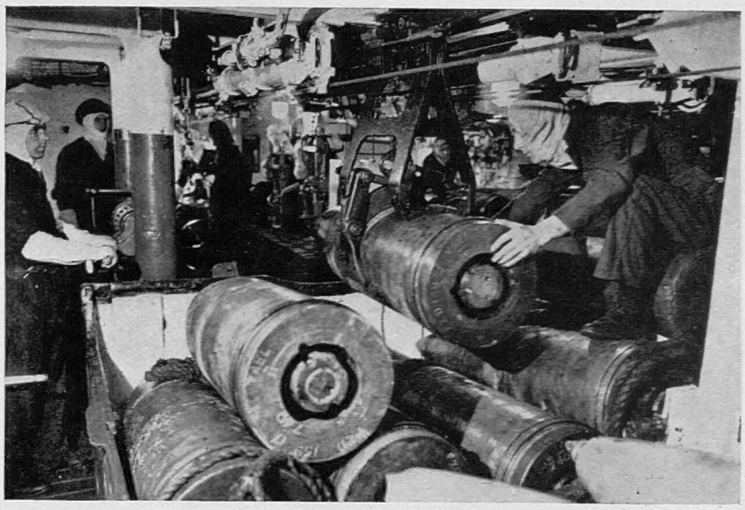
AIR-SEA CO-OPERATION IN BRITAIN'S BATTLE FLEET. A BATTLESHIP IN COMPANY WITH TWO AIRCRAFT-CARRIERS. While the battleships protect the Carriers with their terrific fire-power, so in their turn the Carriers provide air cover for the Battle Fleet and also extend the Fleet's range of vision for hundreds of miles. The Royal Navy has a number of modern aircraft-carriers, some of which are reported to be in the Mediterranean for the coming "amphibious operations" promised by Mr. Churchill and the other Allied leaders—the Italians have none! The speed and manœuvrability of these mobile sea-borne aerodromes are features of great importance in modern naval warfare



OW OPERATING IN THE INLAND SEA. The picture was taken from the deck of the 23,000-ton aircraft-carrier "Formidable": it shows, in the centre, the huge lass; away to the left is "Rodney's" sister-battleship "Nelson." These vessels are, of course, only a few amongst many which are now said to be concentrated urposes: the Germans have recently named a number of British naval units as being in the Mediterranean

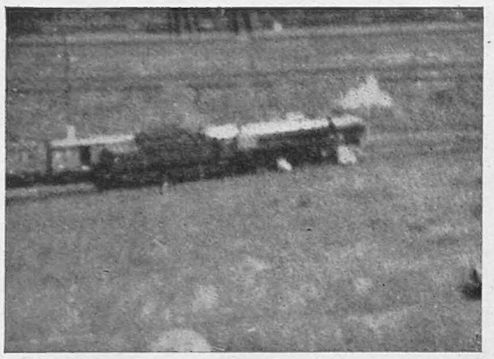


MA NING THE BIG GUNS ABOARD THE "MALAYA": A 15-in. gun crew at their stations on board the 31,000-ton battleship. Officers and men are wearing their "anti-flash" hoods and gloves

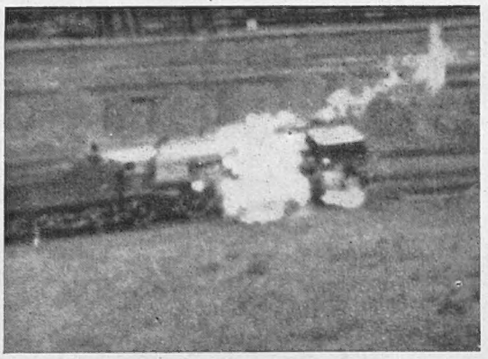


HOW THE 15-IN. PROJECTILES ARE MOVED UP TO THE GUNS—A scene in the shell room of H.M.S. "Malaya," where the big projectiles are prepared for sending up to the guns in the turrets above

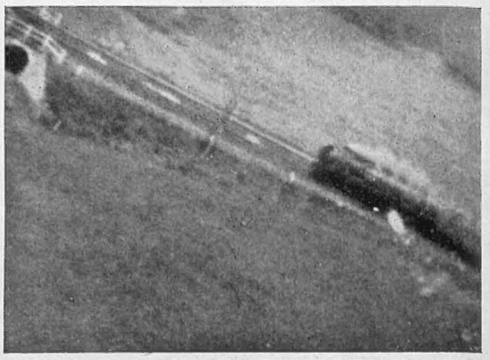
THE SECONDARY ARMAMENT ON BOARD THE BATTLESHIP "MALAYA." A 6-IN. GUN IS MANNED DURING A SHOOT. In addition to her eight colossal 15-in. guns, "Malaya" also carries twelve 6-in. guns: these, too, are capable of doing a great amount of damage during the course of bombardments such as those recently delivered by the Royal Navy against the island of Pantellaria. Note, in the above picture, the size of the shell-charges borne on the shoulders of the men on the left



1. A locomotive in France comes under attack: The Mustang flown by Flying Officer Duncan Grant comes in low to let fly



2. The bullets are registering on the target fair and square, and another valuable railway engine will have to go for repair!



3. Another target comes into view, and the pilot banks to attack this fast-moving locomotive just as it approaches a big culvert

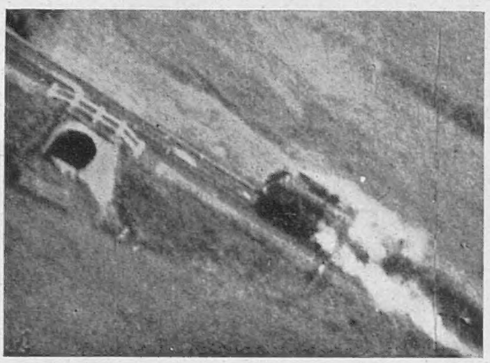
A MUSTANG PILOT'S "DAY OUT"

And what He Achieved During a Train-busting and Aeroplane-destroying Sortie

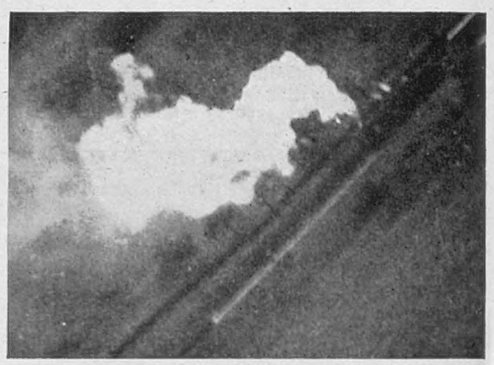
A series of instantaneous cine-camera pictures

Among the champion train-busters of the R.A.F. (now operating almost daily over enemy-occupied territory) are the pilots of a Canadian squadron equipped with American-built Mustangs. Outstanding in this Squadron is Flying Officer Duncan Grant, from Saskatchewan, who was recently awarded the D.F.C. for his flying exploits. The remarkable series of pictures reproduced on this page were taken by a cine-camera mounted on his aircraft during a recent sortie over Northern France, when he shot up seven trains and four parked aircraft—all within the space of 37 minutes. "The weather was very dull, and at times it was raining," he stated in the report of his highly successful day out. "I got my first two locomotives near a rail junction and the others over main lines. During the sortie I crossed two airfields and attacked four parked aircraft—two of them Me.109s and two F.W.190s."

The Mustang which Flying Officer Grant flew is produced by the North American Aviation Company, of California. It is a single-seat fighter aeroplane, which is greatly liked by the R.A.F. on account of its speed and extreme manœuvrability. Its square-cut wings render it conspicuous when in the air. Its powerful Allison engine gives it a very good speed, but so far no details of its exact performance have yet been made available for publication. The Mustang received its first big test in operational flying during the attack on Dieppe.



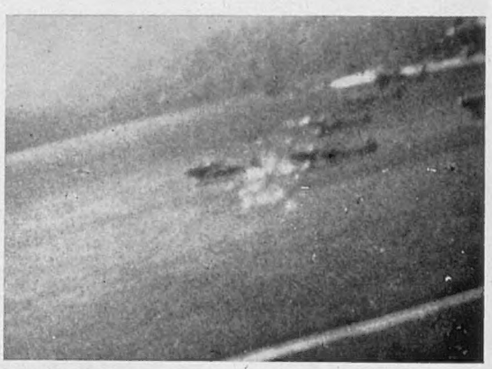
4. The development of the attack on the same engine, with the aircraft again coming in very low with guns blazing furiously



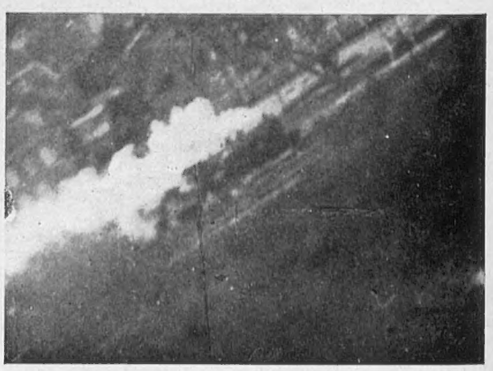
5. Still in search of prey, Flying Officer Grant encounters still another locomotive and again swings round to attack from the beam

THIS IS THE MUSTANG. They are amongst the fastest of their type yet built in the U.S.; and they are the first single-engined fighters based on Britain to go beyond the Reich border. Their first big test came in the Dieppe raid

6. and 7. How the attack on two more trains developed. "Four or five of the locomotives I attacked emitted huge clouds of steam as I passed over them," reported the pilot. This is how the cine-camera made instantaneous impressions as the bullets went home



8 and 9. "On the first airfield I crossed I found two F.W.190s and gave them both a burst," said Flying Officer Grant. "I claimed them as damaged. I found the Me.109s on the second field and got in bursts on two of them"—as depicted in the two pictures above



10 and 11. The bullets from the Mustang are "creeping up" on the parked aircraft and hitting them to very good effect. An attack of this nature is all over within a very few seconds: when the enemy is caught thus there is little he can do—except gnash his teeth!

12. Another railway engine which Flying Officer Grant attacked to round off his brisk and varied and highly profitable sortie!

A NEW AND COMPLETE PICTURE OF THE ISLAND OF PANTELLARIA, the naval and air base in the Sicilian Narrows midway between North Africa and Sicily, which has been bombed from the air and bombarded from the sea incessantly during the past few weeks—*Drawing by E. G. Lambert*

THE ATTACK ON ITALY

The Island Stronghold of Pantellaria: and the Vulnerable Italian Lines of Communication Along the Gulf of Genoa

—Special Sphere Drawings and Maps

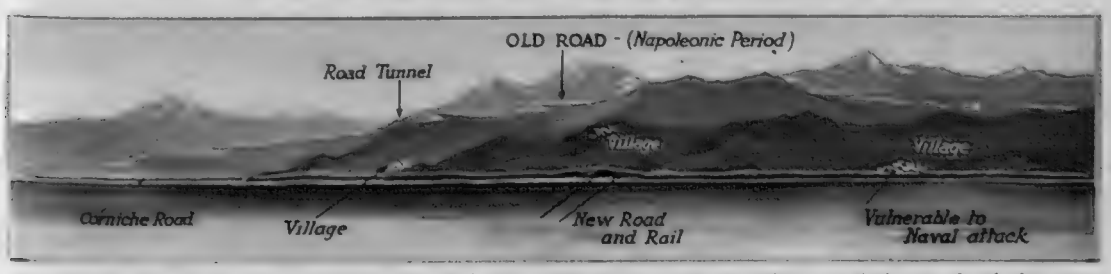
Pantellaria is the Italian outpost in the Mediterranean and the "stronghold" from which Mussolini intended to block the way through the Narrows, thus cutting the Mediterranean into two halves. It lies some 50 miles from Tunisia and about 80 miles from the island of Sicily. Although only 32 square miles in extent, it has wielded a strategic importance out of all proportion to its size. The island is rugged, with steep cliffs at most points which are themselves a formidable defence. The bay on which the little capital is situated is the only harbour of size. Near it are the aerodrome and the seaplane base. During the years immediately preceding the war, the island was strengthened greatly: throughout the North African campaign it was a constant thorn in our side.

To-day, it looks as if the island is being obliterated under the weight of bombs and shells now raining down on it—as a possible preliminary to invasion. To take only one recent sequence, on four days out of five Pantellaria and its harbour and aerodrome were pounded from the sea and from the air. Our naval vessels have appeared out of the darkness and have scored hits on barracks and batteries even before the defence was aware of what was coming.

Nearly all the defences appear to be congregated round the north-western end of the island, which is highly cultivated. Stone fences divide the fields, as in the case of Malta. The drawing given above shows how the main volcanic peak, with its circular crater, lies to the south of a higher mass which occupies a more central area. It was once stated that the Italian Air Force was actually making use of the crater of the volcano, and that hangars had been scooped out of the side of the crater rim to render the aircraft immune from bombing! This pleasing story has, however, lacked any confirmation: it may be taken that the aerodrome at the north-west of the island is the main air base

A NEW TROOP-CARRYING INVASION BARGE. The L.C.I, which is operated by the U.S. Navy's Amphibious Force. Barges of this type are manned by the U.S. Navy and Coastguard personnel. They may soon be figuring in a Continental invasion!

A VITAL STRETCH OF THE ITALIAN COAST: The naval harbours and important commercial harbours on the Gulf of Genoa. It is at Spezia that Italy's Western Mediterranean Fleet now lies anchored. The railroad and road lie quite exposed along this stretch of coast



IN NAPOLEON'S DAY, the roads into Italy around the Gulf of Genoa were built out of the reach of the guns of Nelson's ships. Later roads and railways, however, were not so wisely placed: they are thus vulnerable to attack from the sea by Admiral Cunningham's vessels of war

Drawings on left—When Napoleon invaded Northern Italy, he realised that, with the command of the Mediterranean virtually in the hands of the British Navy, any roads built near the Italian shore would come under the guns of the adventurous Nelson. He therefore caused roads to be built around the northern end of the Gulf of Genoa in such a way as to avoid any serious threat to his transport. This forethought enabled Napoleon to conduct his campaigns in North Italy without interruption from the sea. He thus won the Battle of Marengo and established an Italian kingdom without supply worries to distract him.

In recent times, however, road and railway construction have been planned with, apparently, no other thought than the selection of the easiest and cheapest route from port to port or town to town. That applies to the whole Italian railway and road communications. They avoid any constructional difficulties which a war-planned roadway might have suggested as desirable. For long stretches, road and railway follow the beachline, and pierce a headland by means of a tunnel where this is compulsory. These open stretches and the tunnel entrances have been both bombed and bombarded during recent weeks

FOGGIA, COMMERCIAL CENTRE OF THE PLAIN OF APULIA AND A VITAL POINT IN THE COMMUNICATIONS SYSTEM OF CENTRAL ITALY, is bombed time and time again. It is a town of 70,000 inhabitants and possesses a big aerodrome—*Drawing by E. G. Lambert*

ASSAULT BY AIR ON SICILY AND ITALY

The Bombing of Railways, Airfields and Harbours—The "Softening-up" Prelude to Invasion

—A Series of Special Sphere Drawings

Part of the general and intense air assault which Italy is now experiencing at the hands of Allied bombers is being directed towards the destruction of her railway communications as much as possible. In order to dislocate the supply services to Sicily, points in the Southern Calabrian heel of Italy have been strafed, scientifically and continuously. Bridges and railway tunnels have been attacked: in one case it is reported that bombers actually bounced their bombs within a tunnel entrance, which was blown up in the subsequent explosion! Shore railways have also been attacked from time to time by gunfire from British submarines operating on the surface close inshore in Ionian, and other Italian, waters.

The attack on Italian rail communications was recently extended as far north as Foggia, where several vital supply lines converge in the Plain of Apulia. There is, in fact, no part of Italy which is beyond the range of our big bombers. On several days in succession four-engined bombers have concentrated on targets in and around Foggia, which has a population of some 70,000 people, and which lies in the centre of the great sheep-rearing plain at a point some 80 miles to the north-east of Naples.

The commercial importance of Foggia has grown considerably of late, and it has become a communication centre for a wide area: railway connections extend to Brindisi and Bari, naval and air bases which have played a considerable part in the Italian war effort. Although Foggia's position in the Apulian Plain does not give the city that dramatic setting which characterises other famous cities of Italy and Sicily, it does possess some churches and towers of architectural interest.

In the drawing reproduced above, the city is viewed from the direction of Lucera, a smaller town perched on higher ground to the north-west of Foggia.

The drawing by Mr. Byatt below is based on a report of the air assault against Southern Italy, where the vulnerable coastal railways have been attacked at various points: these railways run for long stretches along the beaches below the cliffs, and thus are good targets for our aircraft. In this case, a main-line coast train was crossing a deep viaduct over the river when it received a direct hit from a high-explosive bomb. Trucks of this train collapsed with the girders of the bridge, and fell into the river. They are now resting on the river-bed.

KEY MAP OF FOGGIA, showing its communications by rail with important Italian centres. It lies 80 miles inland from Naples towards the eastern coast of Italy

RAIL COMMUNICATIONS IN SOUTHERN ITALY AND SICILY HAVE BEEN ATTACKED ON NUMEROUS OCCASIONS DURING THE AIR ASSAULT. The incident depicted here occurred during an attack on the southern tip of Italy, when a railway viaduct was destroyed by bombs and a railway train was sent crashing into a river valley below (see notes above)—*Drawing by E. Byatt*

THE BOMBING OF THE ANCIENT PORT OF GIRGENTI—THE ATTACK ON THE HARBOUR AT PORTO EMPEDOCLE, IN SOUTHERN SICILY, part of our general offensive by air on Italy, is watched from a little distance by islanders near the famous Temple of Juno—*Drawing by E. Byatt*

Among the ports and harbour works attacked by Allied aircraft along the southern coast of Sicily there has occurred the name of Porto Empedocle. On several occasions Allied aircraft have bombed shipping and the harbour works at this southern port. Once again the tide of war has taken the combatants into an area redolent of history, for this little Porto Empedocle is none other than the modern successor of the port of Girgenti, a centre of Greek culture when Sicily was the thriving western colony of ancient Greece. Girgenti and its temples occupy high ground in picturesque fashion. From the town's ancient wall, one looks across a small, smiling plain towards the port of Empedocle. Two silver streams meander in pleasant fashion across this plain. Ten magnificent temples survive to this day in varying degrees of completeness. The town was originally founded in 592 B.C. The temple of Concordia stands almost complete in its massive solemnity. The ruins of the temple of Juno Lacinia are elegant, but are much less complete. It is among the columns of this last-named temple that Mr. Byatt, *The Sphere's* artist, shows some of the inhabitants of Girgenti watching the smoke arising from the bombed harbour of Empedocle

THE MOST DRAMATIC SPOT IN THE CENTRAL MEDITERRANEAN AIR WAR. The Allied attack on Milo aerodrome and the Egadian Islands—*Drawing by Percy Home*

The air assault on the western section of the Sicilian defence points took our flying forces into one of the most dramatically picturesque districts of the whole Mediterranean area. Milo aerodrome lies on level ground in proximity to the Monte San Giuliano, which rises abruptly to a height of 2,465 ft., a mountain which is as striking in appearance as it is historically interesting. The aerodrome has been heavily bombed on several occasions, in spite of resistance by Axis fighters. Hits on hangars and other buildings were scored and incendiaries started big fires. Other air actions have taken place between Trapani Harbour and the adjacent islands. Pilots flying round Monte San Giuliano will have looked down upon the oldest sites in the Mediterranean area, for the worship of the Venus Erycina goes back to the remotest times. The town as one sees it to-day is still largely enclosed within its Carthaginian walls, restored at a later date by the Romans. Tradition connects the site with the story of the Odyssey, and there are many coincidences in the narrative which give colour to this assumption. One climbs from Trapani by a winding track up the westward slope, the same which Pyrrhus took when scaling the height. Gothic churches and Saracenic domes recall later stages in the history of this astonishing hill town. High above it rise the battlements of a mediæval castle, the older section being separated from the restored portion by a chasm, joined by a bridge which legend ascribes to Dædalus, the father of Icarus. From the castle one obtains a magnificent panorama over much of the island of Sicily, and on a clear day one can see the island of Pentellaria, and even Cape Bon, near Tunis

DURING THE PROGRESS OF THE NORTH AFRICAN CAMPAIGN—and especially during its final phases—the railways supplying and reinforcing the Afrika Korps were bombarded from the air without cease. This incident, of the destruction of an ammunition train, occurred near Enfidaville—*Drawing by W. G. Whitaker*

A train, laden with ammunition and dive-bombing aircraft for the Axis front-line forces, was attacked by our bombers and fighters during the closing phases of the campaign in Tunisia. It was standing in a country station near Enfidaville. In the result, the track was torn up by direct hits, and the rail cars were shattered and burned out: shells were strewn over a wide area, the aircraft aboard were wrecked and the station buildings were badly damaged. This was only one item of the Allied offensive against the enemy's rail communications and supply lines. The steady pressure exerted by this means kept thousands of the enemy's weapons out of the front line: Axis communications were disorganised; stores were destroyed; millions of rounds of ammunition never reached the guns; and aircraft were put out of action even before they were able to take to the air. What happened to the train in the above picture is shown in the photograph below

A FINAL LOOK-BACK at the TUNISIAN CAMPAIGN

The Part Played by the North African Railways in the First Axis Victories and then Their Eventual Downfall

Described by DONALD COWIE

AN interesting fact emerges from a final map of the Tunisian campaign—that the railways of that country provide a perfect skeleton ground-plan of the military operations. Often the fighting took place in wild territory away from the lines, and roads played an important part, carrying most of our troops and supplies at first. But the operations were obviously planned, per the text-book, to secure the rail communications foremostly.

Why this continued dictatorship of the old method in an age of more elastic forms of transport and in a land such as Tunisia, where railways are sparse? The general answer to the question is that railways can still carry armies more economically and efficiently than roads and airways. The particular Tunisian answer is that the Axis forces, based on Bizerta and Tunis, operated on interior lines, which were, for heavy supply purposes, the railway lines running from those ports to Mateur, to Medjez-el-Bab, to Pont du Fahs, and southward via Enfidaville, Sousse and Sfax to Gabes, with branches to Gafsa.

Admittedly, there were not battles as such for the actual lines and stations as in the 1914-18 war. The railway has ceased to be the principal means of carrying combatants into the actual firing-line, and lorries, tanks and mobile gun-carriages now make it possible for the troops to range on their own over wide terminal and intervening areas. But rail transport, even in Tunisia, brought the forces to their assembly points. It was still the heavy carrier.

We were decidedly less fortunate than the Axis in the possession of good lines. The First Army had a railway for its main transport from Bone to La Calle, on the north coast, then nothing but roads till it had finally secured the line which begins at Tabarka and passes through Tamera and Sejenane to Mateur. The fighting swept up and down that line. Nor were we much better off farther south, for the railways running from Bone to Tebessa, and across the centre of Tunisia to Mejez and Pont du Fahs, were incapable of bearing heavy traffic. Thus we had to rely for the greater part of the campaign on road communications, and were much hampered thereby, especially in the bad weather (which does not affect railways so much as roads).

On the other hand, the Axis forces were able to make continuous and heavy use of those more efficient rail radiations from Bizerta and Tunis.

SHELLS BLOWN OUT OF THE RAILWAY TRUCKS BY BOMB BLAST lie shattered beside the wrecked train. This photograph shows the result of the bombing attack depicted in the drawing above

It was not till we had our air arm well forward and could strike the lines hard that Von Arnim and Rommel began to encounter serious supply problems. Then we caused great havoc among the brimming goods trains. A near miss by a bomb is sufficient to blast the contents of ammunition wagons sky-high. We discovered abundant evidence of this after the victory—railway tracks littered with shell cases, derailed trucks with the twisted remains of dismantled aircraft and hoisted tanks.

Yet it is also true that railways under the conditions of modern war can be quickly repaired; often more quickly than roads. Tunisia contains some 1200 miles of line. About 800 miles of this was in Axis hands till the concluding stage of the campaign. We held only 200 miles for most of the time, and the remaining 200 was more or less continuously in the actual fighting area and useless. Within a period varying from two hours to ten days after its capture, all the Axis system was in full working operation again, save for two short stretches that had been blasted away. By the end of May even those stretches had been re-tracked.

This was thanks to the work of Military Railway Services, North Africa, largely an American organisation, but mainly British on the actual construction side, and to modern methods of re-laying tracks and rebuilding embankments and bridges. The principle of this system is very similar to that of the child's toy known as "Meccano." That is to say, a variety of sections or parts are brought forward which can be adapted to any situation and laid with speed. Repairs to seven badly blown bridges were completed on the Kasserine-Sousse line in ten days. Quick diversion lines laid across country often solved ticklish problems. When Mateur was taken, the Allies came in possession of an isolated spur leading to Tabarka. They found one engine, nineteen trucks, one Diesel car and one lorry with flanged wheels. With these simple means they organised within a few hours haulage at the rate of 300 tons a day to the front. (It might be mentioned that to move a

IN TUNISIA TO-DAY. The British troops in North Africa are now clearing up the battlefields and gathering in the booty. Whilst this work is going on, the coast watchers and patrols sweep the horizon for any signs of enemy raiders off the Tunisian shores—*Drawing by E. Osmond*

The skirling of the pipes of victory has ceased in the streets of Tunis; the last of the Addresses to the troops of the Eighth and First Armies has been made; and silence has now fallen on many districts which a few weeks ago were palpitating with breath-taking news and rumours. But the silence of to-day, and the absence of thrilling despatches from the war correspondents (most of whom are now back in London), do not signify that North Africa is sleeping. The day-to-day work of clearing and sorting the immense war booty goes on. And from cape to cape the coast patrols keep ceaseless surveillance along the surf-beaten shores; from points of vantage, watchers—revelling in their unwanted ease—swing their glasses over the shining horizon out to sea, beyond which lies the enemy and beyond which the invasion of the enemy's territory will soon or late take place

modern infantry division 1,216 10-ton railway trucks or 4,165 3-ton lorries are necessary.)

Another helpful feature of the Axis collapse in Tunisia was that effective demolitions were seldom carried out by the overwhelmed enemy. Charges were found by our sappers in most of the bridges, embankments, tunnels and points, but they had not been fired. Large quantities of rolling-stock were left by the Germans in good order—fifty serviceable engines among them.

But we owe it to the daring of special service troops that much of this valuable railway material does remain intact. There are countless incidents in the campaign of picked parties of our men mounting enemy trains and steaming away with them. The most remarkable feat was that of a Lieut.-Colonel and a small body of men, who set off in a lorry to Gafsa, whence they steamed away with thirteen engines and a good many trucks, running the gauntlet of enemy tank patrols, which fired on them in one place at 150 yards' range!

All this experience will be very valuable when landings are made on the Continent. The Germans have already boasted that their European rail communications will give them an advantage that they did not have in North Africa. No race has developed military rail communications to such a fine art as the Germans. But only one race has produced such a "rail-buster" as the late T. E. Lawrence, whose spirit remains.

On right—**THE TWO LEADERS OF THE FRENCH GOVERNMENT IN NORTH AFRICA:** General Giraud and General de Gaulle stand side by side at an inspection of the guard of honour after the latter's arrival. General de Gaulle arrived by air on May 30 and was met at the airport by General Giraud. The talks between the two have now been brought to a successful conclusion and have resulted in the establishment of a new Government in Algiers

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THE MAKING OF AN ARMY OFFICER

How the War Office Selection Boards Select the Men who are to Receive Army Commissions. Described by CHARLES GRAVES

I HAVE spent the last month in following the careers of four imaginary characters from Civvy Street up to their War Office Selection Board, and it has been a real eye-opener. In recent articles in THE SPHERE, I have made passing references to the Personnel Selection Officers at Primary Training Centres and also to the psychiatrists. But not even the young potential officer who goes through the 1943 obstacle-race of interviews, tests, more interviews, and more tests can have any idea of the immense care taken by the War Office to ensure a constant flow of future leaders.

Take any recruit, whether or not the Personnel Selection Officer has picked him out as worthy of observation for a War Office Selection Board. After leaving his P.T.C. he will, if he is going to the Royal Armoured Corps, for example, find himself at a Training Regiment. Here he is interviewed by his Squadron Commander for about fifteen minutes within the first week. Every week for the next month of general military training his Troop Sergeant will send in a report about him and each of his fellow-troopers. The Sergeant will grade him for drill, turn-out, rifle, map-reading, gas, pistol and absence, and then add a pithy sentence on his general progress.

Meantime, the Squadron Commander will suddenly call out individual men to drill the squad, will watch the organised games, and in other ways keep an eye on every individual man in his squadron. After three weeks he will pick out the most likely men, hold a conference with his Troop Sergeants, who have also got a short list, interview the three or four outstanding men from each troop, and then send them for an interview with the Unit Selection Board, sometimes known as the Regimental O.C.T.U. Board.

Usually, the lucky trio or quartet have already been labelled by the P.S.O. at their P.T.C. as being potential officers. Sometimes, however, some recruit has escaped the attention of the latter. Sometimes, too, the Squadron Commander does not agree with the opinion of the P.S.O. By a new rule, however, he has to send in the recruit's name, like that of the others, for the interview.

Three officers proceed to question the officer-candidates on their education, games, hobbies, books, civil employment, travel, experience, ambitions, reasons for wanting a commission and choice of regiment. Only if the officers are unanimous in deciding that the candidate is unsuitable for a commission is his name not put forward for the next hurdle—the interview with the Commanding Officer of the Training Regiment. At this interview the Commanding Officer asks further questions to find out what really makes him tick, his views on life generally and on the Army in particular.

I must, of course, be careful not to turn this article into a crib for future aspirants to a commission, but it is well known that previous candidates have naturally told those coming after them what they themselves have been asked. A stock question is: "What do you think is the ideal subaltern?" Every candidate is prepared for it and has a textbook reply. Under cross-examination, however, he may easily disclose his true feelings or ignorance.

The Commanding Officer may now either recommend the candidate for an interview with the War Office Selection Board, or he may retard him for a couple of months to gain further experience, or he may plough him summarily. If the candidate has been approved, he will go off to one of several W.O.S.B.s. The normal routine is that he arrives with a number of other potential officers at lunch-time, and, after a solid meal, sit down to four hours of written tests and questionnaires interrupted only by a short break for tea. He has forty-five minutes in which to fill in his personal particulars, his arm of service and type of unit, military courses which he has taken, and type of contact with enemy, if any (a Commando corporal will put down "Hand-to-hand," whereas a gunner might only be able to claim "Ack-ack"). Any jobs he had in Civil Defence, the name of his school, his employer, exact job and promotions, any voluntary organisations to which he belonged and, finally, his record as an athlete and games player, have to be filled in. After this he meets his old friend, the matrix test, for which he is allocated twenty minutes, and which can be best described as reasoning in symbols. Now comes a verbal intelligence test (also lasting twenty minutes), which can be described as reasoning in words.

The Testing Sergeants who handle this side of the W.O.S.B.'s probing, award marks according to a rigid rule.

After the tea interval, each candidate has to answer a medical questionnaire which involves anything from chilblains to hay fever. Personal and family relationships have also to be given in detail. This is followed by a word-association test, which deals with quickness of thinking.

Next comes the epidiascope. Five intriguing little scenes are thrown on the screen and the candidate has three-and-a-half minutes in which to write a novelette about the events leading up to the scene, what happened at the scene and what was likely to be the sequel. Each of them looks as though it is taken (and probably has been) from some ancient silent film, and is an excellent test for telling whether a candidate could pop his head over a trench, take a brief look round and appreciate the situation immediately.

The candidates now have a break until dinner, which is as in an officers' mess in company with the staff of the W.O.S.B. After dinner they form small parties (six to ten in a group) and take part in a kind of junior debating society, the subjects being selected by the candidates themselves. Two which I heard discussed were the problem of educating German youth after the war, and the future of the tank in warfare. Once again the Military Testing Officer is watching and listening, and noting down his first impressions. The officers of the staff have as their primary duty the spotting of the "good points" in each candidate. They do not look for the bad points. That a candidate does badly in any one of the tests will not damn his chances. That he does well will help him.

That is all for the first evening. Next day, after breakfast, the candidates take part in a group task. It might be the manufacture of a raft in which to cross a stream, though this was not the problem set when I was present. But that could easily be the selected test for finding out which men have innate leadership. I am told that it is most interesting for the Testing Officer to watch two dominant types each trying to assert itself.

A series of minor tactical problems follow. These problems are common to all arms, and any well-trained Home Guard N.C.O. would find them easy after his initiation into the mysteries of O Groups.

Now comes luncheon, and then a series of interviews with the psychiatrist, the President of the Board, who sits alone, and other members of the Board, who sit in pairs. These interviews are informal, but can range from the amiable to the blunt. It is not unusual for a candidate who has opted for the Royal Army Pay Corps to be asked how he would feel after the war if he found himself at a bar with a man from the First Army on his left and a man from the Eighth Army on his right. If the same man were married and had a child, he might be asked what his reactions would be if after the war his son and heir asked the famous question: "What did you do in the Great War, Daddy?" The main function of these interviews is to enable the members of the Selection Board to estimate within a quarter of an hour the personality, intelligence, venturesomeness, useful hobbies, officer qualities, military back-ground, education and civil background of each candidate.

The psychiatrist's view is based partly on his own observation of the candidates during their week-end at the W.O.S.B., and also on the tabulated findings of the Testing Sergeants after they have collated the answers to the written examinations.

But these tests and interviews are by no means all. The candidate has to show his manual dexterity when confronted with, let us say, a knife-grinding machine and told to take it apart and reassemble it. (Once again, I have chosen a test which is not actually used, but is typical of those that are actually employed for this purpose. Perhaps a little unkindly, I suggested that future candidates might even be invited to explain zip fasteners.)

Last of all the tests comes the purely physical one of an obstacle-race, which involves Tarzan-like climbing of trees and ropes, crossing streams on slippery poles and, finally, the "death dive," as invented (I fancy) by the Commandos.

So ends the second evening at the W.O.S.B. as far as the Board is concerned. The candidates can spend the evening as they like, and will, presumably, compare notes and sleep rather fitfully, with the knowledge that next morning each of them will have his final interview in front of the President, Deputy-President, Military Testing Officer, two other officers and possibly a Technical Officer, such as (*a*) a Royal Engineer Lieut-Colonel for a candidate who is opting for the sappers, or (*b*) a Gunnery Colonel for a candidate for the Royal Artillery.

This final interview is usually brief, and is chiefly for the purpose of discussing with the candidate the question of the branch of the Service to which he wishes to go. It is easily possible, for example, that a candidate who wants to go to the Royal Artillery is better suited to the Royal Army Service Corps, or vice versa. Again, there are rigid rules about the maximum age for getting a commission in the more active Corps, like the Royal Armoured Corps.

It is only then, after he has left the Selection Board room, that the candidate returns to his Unit. He still does not know whether he has been successful or not. The news of this will finally reach him three or four days later—after the Board has decided (*a*) whether he is fit to become an officer, and (*b*) whether the branch of the Service for which he has opted is best suited to him. Even now, of course, the candidate is by no means sure of securing a commission.

I have made no investigations into what is likely to happen to candidates going to other Corps; but the youth who has opted successfully for the Royal Armoured Corps has to return to his Training Regiment for a period depending on vacancies at O.C.T.U. He then has several weeks at a pre-O.C.T.U., where once again he may fall by the wayside. Finally, he has several months at his O.C.T.U. It does not surprise me, however, to learn that, after this determination on the part of the War Office to sift and sift and sift again, 95 per cent. of potential officers secure their commissions.

THE MARKSMEN "UNDERGRADUATES" OF THE TANK CORPS: Cadets of the Royal Armoured Corps O.C.T.U. drawing 6-pounder ammunition for their firing tests at moving targets. This picture was taken on a Tank Firing-Range during tests of Cadets of the Royal Armoured Corps O.C.T.U. They have come from Sandhurst, where they were taught the theory and practice of mechanised warfare and the care and maintenance of tanks, weapons and equipment. Having passed the most gruelling tests of nerve, balance, agility and physical fitness, they are now to show how near they approach the ideal which has been the sole object of all their education—the ability to hit a moving tank from a moving platform and to keep on hitting—and eventually to command other men who can do so

MORE ABOUT THE ANTI-U-BOAT HELICOPTER

THE HELICOPTER WITH WHICH MR. IGOR SIKORSKY MADE HIS FIRST EXPERIMENTS: The V.S.300, which has pontoons instead of wheels. This strange aircraft and its capabilities were completely described in "The Sphere" of March 20, 1943

THE V.S.300 HELICOPTER LANDS ON THE MUD: The inflated, rubberised fabric pontoons make this entirely practical. The machine just floats down vertically until it comes to rest on the surface

THIS IS THE NEW-TYPE HELICOPTER with which experiments are now being conducted. The XR4 is a two-seater, with a cabin forward: it is being developed for the U.S. Army, and is thus equipped with wheels. Here a passenger is coming aboard by way of a rope-ladder dropped to the ground by the pilot

A FRONTAL VIEW OF THE NEW XR4, showing the two-seat cabin and the manner in which the landing-wheels are attached to the aircraft. Igor Sikorsky, on the ground, is carrying on a telephone conversation with a passenger whilst the helicopter hovers just overhead

A COMPLETE VIEW OF THE NEW HELICOPTER, showing its present appearance with front cabin, landing-wheels and fabric-covered fuselage. This is the latest development of Mr. Igor Sikorsky's outstanding invention, other specimens of which are now under construction for the anti-U-boat campaign

We have already published pictures of the new helicopter invented by the Russian-American aircraft designer, Mr. Igor Sikorsky. Numbers of these are under construction in the U.S. for use from the decks of merchantmen in the Battle of the Atlantic Gap. Now we learn that the U.S. Army are also interested in this strange machine: the pictures given here were taken during a recent demonstration of the new XR4, which might be regarded as a development of the original V.S.300 with which Sikorsky carried out his first experiments

This new type has a Warner engine of 165 h.p.: in front of it is a cabin in which pilot and passenger can sit in comfort. Behind and above them is the main rotor, which has a diameter of 36 ft. and consists of three blades made of hollow steel tubing. A novel feature of the craft is the small rotor mounted vertically at the tail parallel with the fuselage: this takes the place of rudder and tailplane. It, too, has three blades; is 7 ft. 6 in. in diameter; and has a thrust at right angles to the line of forward flight. The main job of this small rotor is to correct torque—that is, to prevent the whole machine spinning round on its base under the influence of the big main rotor. By depressing a foot-pedal and changing the pitch of the blades the rear rotor can also be used as a rudder. While the helicopter is normally steered by means of the main rotor, the small one is also useful for turning around without movement in any other direction.

The craft has no wings: if its engine stops, the big windmill rotor wafts it fairly gently to the ground. It may hit hard, but not hard enough to hurt its pilot or passenger. When a helicopter alights on a ship at sea the vessel need not turn into wind as an aircraft-carrier must. One can learn to fly a helicopter in from two to four hours, and it is almost an advantage to have no flying experience, since in the latter case there is nothing to unlearn!

The PROBLEM of the ITALIAN NAVY

Where and How Will it Fight if Called Upon to Defend the Mainland from the Sea?

By MARTIN CHISHOLM

AN Italian naval spokesman on the Rome Radio recently sought to reassure his countrymen that their navy would not let them down. "The Italian Navy will fight," he said. "It is not true that Italian sailors will shirk their duties or that they will seek refuge in hide-outs. This is enemy propaganda."

This statement is clearly indicative of the state of distrust and uncertainty prevailing in Italy. It implies, too, something of an admission of the terribly thorny problem facing Mussolini and his admirals. The Italian Fleet is certainly in an unenviable situation. At any moment it may be needed in two, or even three, places at once.

The total Italian fleet strength available at the present time for operational purposes is six or possibly seven battleships, six or seven light cruisers, and between forty and forty-five destroyers. The battleships fall into two classes, the old Cesare class, consisting of the *Giulio Cesare*, *Caio Duilio* and *Andrea Doria*, and the thoroughly modern and up-to-date Littorio class vessels. Of the latter there are four, *Littorio*, *Vittorio Veneto*, *Impero* and *Roma*, but it is uncertain whether more than three of them can be reckoned as ready for action.

Italy has not got a single aircraft-carrier. Her naval building policy has been based entirely on her needs within the Mediterranean itself, and, believing herself to be more than adequately protected by her numerous bases, she has placed her reliance entirely on land-based air protection for her battle-fleet.

The four modern battleships are undoubtedly fine vessels. Italian naval architects and engineers have gained a deservedly high reputation and the workmanship of Italian shipyards is of a very high standard. The *Littorio* and her sister-ships may roughly be described as the Italian equivalent to our own King George V. class. The latter mount ten 14-in. guns as against nine 15-in. in the Italians. The Littorios have a secondary armament of twelve 6-in. guns as against sixteen 5·26-in. weapons in the K.G.V.'s. Both British and Italian ships have, according to published information, exceeded their designed speed of 30 knots during their trials. In view of the fact that they had not to take account of very long distances or of the tremendous stresses set up by work in the open oceans, the Italian designers have probably been able to work with slightly lighter construction than the British ships, without sacrificing armour-protection or impairing "battle-worthiness."

The Cesare class vessels are in quite another category. They are 12-in. gun ships built in 1911 and 1913. *Giulio Cesare* and *Andrea Doria* were both reconstructed a few years before the war. Either *Caio Duilio* or *Andrea Doria* was severely damaged by torpedo at Taranto and required very extensive repairs.

Viewed purely in terms of tonnage and gun-power, the most striking weakness of the Duce's battle-fleet is in cruisers. Admittedly, with only the Mediterranean to guard, Italy's need in cruisers is nothing like commensurate with that of the British Navy, but her present cruiser-battleship ratio of something like six to six shows a complete lack of naval balance, and this is the more marked, since the light cruiser is among the most useful of vessels for dealing with, and endeavouring to break up, landing operations.

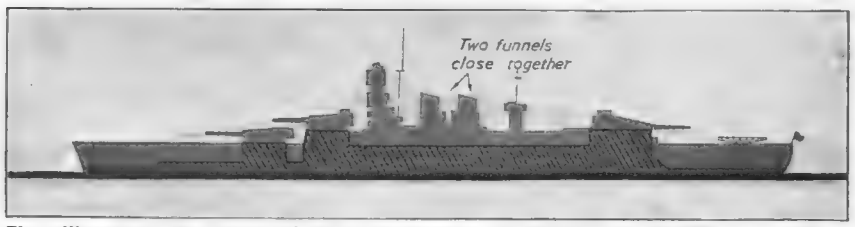
The same weakness is revealed in the destroyer category. Destroyers are needed in numbers for screening the battle-fleet itself, for anti-submarine work, and for the general task of coastal patrol and protection. A destroyer strength which, at the maximum, probably does not exceed forty-five is highly insufficient for Italy's present needs. Destroyers, too, are tremendously valuable weapons against landing operations.

So much for the strength of the fleet itself. In addition to the fleet vessels Italy still has a powerful force of light, fast motor craft, roughly approximating to the vessels of our own Light Coastal Forces. These, of course, do not operate with the fleet, but from their own special bases. The island of Pantellaria was, until the R.A.F. started to visit it in force, a particularly useful base, which enabled light craft to work at short range in the Sicilian Narrows. Needing only comparatively simple shore facilities and not requiring any deep-water anchorage, these small craft are very flexible as far as bases are concerned, and facilities can doubtless be quickly improvised in many of the indentations in which the Italian coast and islands abound.

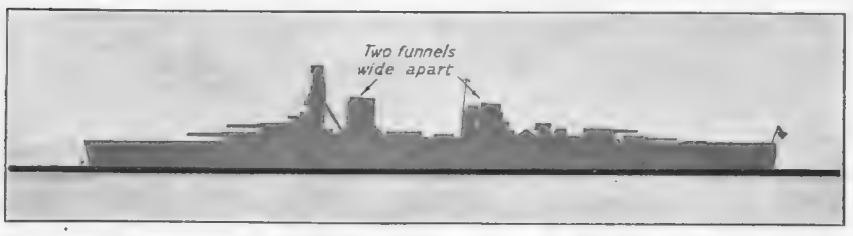
Italy still has at her disposal a large submarine force, though its record up to date has not been a particularly good one, and the effectiveness of Italian submarines has been nothing like as great as that of the German U-boats.

During recent months in particular, it must be assumed that Italy has pushed ahead rapidly with the strengthening of her shore defences. The German Press recently published pictures purporting to show very heavy gun defences with protection for their crews in the rocky Sicilian coastline. These pictures were obviously put out with propaganda aims in view, but any invading force would have to reckon on finding formidable opposition from shore-based guns.

AN IMPRESSION OF SOME OF THE VESSELS COMPRISING THE ITALIAN FLEET are seen the following—(in background) the most modern type of destroyer, of the Avie a Cavour class battleship of 25,000 tons (the "Cavour" herself was torpedoed at Tara



The silhouette appearance of the Littorio class battleships of 35,000 tons. These vessels have nine 15-in. guns and an overall length of 775 ft. Their designed speed of 30 knots was exceeded on trials



The Trento class cruisers of 10,000 tons. They are 8-in. gun cruisers, these weapons being remarkably powerful with exceptional range. They have a designed speed of 35 knots, but the "Trento" has reached 38·7 knots

The Grecale class destroyers are vessels of 1,449 tons. They have a speed of 38 knots and carry a complement of 153. They are armed with 4·7-in. guns

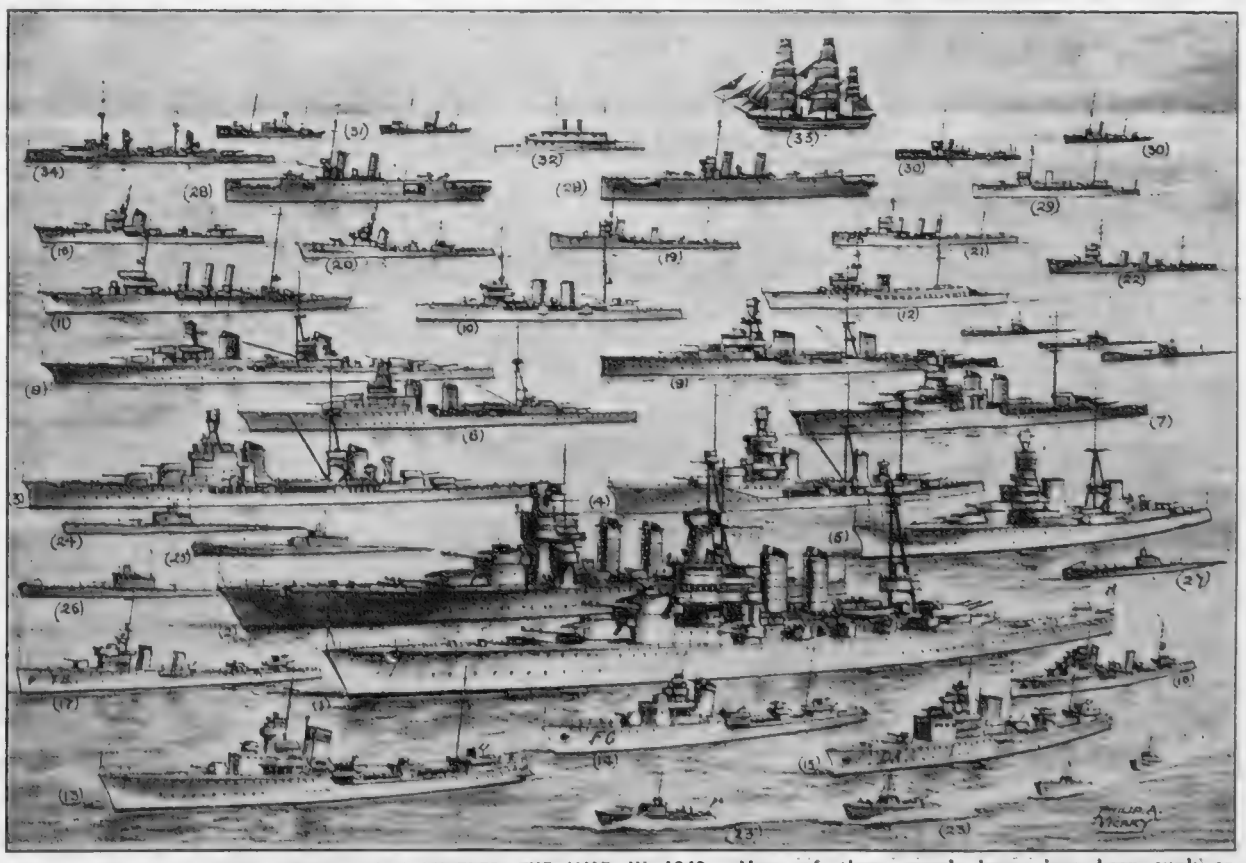
Key to drawing on right—

1—LITTORIO class : three battleships, 35,000 tons. Nine 15-in. and twelve 6-in. guns. Speed 30 knots.
2—CONTE DI CAVOUR class : four battleships, 23,622 tons. Ten 12·6-in. and twelve 4·7-in. guns. Speed 27 knots.
3—"BOLZANO," cruiser, 10,000 tons. Eight 8-in. and twelve 3·9-in. guns. Speed 32 knots.
4—ZARA class cruisers: four ships, 10,000 tons. Eight 8-in. and twelve 3·9-in guns. Speed 32 knots.
5—TRENTO class (CIANO class similar) : four ships, 10,000 tons. (*Ciano* 8,000 tons.) Eight 8-in. guns (*Ciano* ten 6-in. guns). Speed 35 knots.
6—REGOLO class cruiser: 3,362 tons. Eight 5·3-in. guns. Speed 41 knots.
7—GARIBALDI class : 7,874 tons. Ten 6-in. and eight 3·9-in. guns. Speed 35 knots.
8—EMANUELE FILIBERTO class : four ships, 7,283 tons. Eight 6-in. and six 3·9-in. guns. Speed 37 knots.
9—LUIGI CADORNA class : six ships, 5,008 tons. Eight 6-in. and six 3·9-in. guns. Speed 37 knots.
10—"BARI" (ex-German *Pillau*) : three ships, 3,248 tons. Eight 5·9-in. and three 3-in. A.-A. guns. Speed 27 knots.
11—"TARANTO" (ex-German *Strasburg*): 4,550 tons. Seven 5·9-in. guns.
12—"ERITREA," escort vessel, 2,172 tons. Four 4·7-in. guns. Speed 20 knots.
13—AVIERE, ORIANI and GRECALE classes : destroyers, twenty ships, 1,450-1,900 tons. Four 4·7-in. guns, six 21-in. torpedo-tubes. Speed 39 knots.
14—FOLGORE class : four ships, 1,220 tons. Four 4·7-in. guns, six 21-in. torpedo-tubes. Speed 38 knots.
15—DARDO class : four ships, 1,206 tons. Four 4·7-in. guns, six 21-in. torpedo-tubes. Speed 38 knots.
16—NAVIGATORE class : twelve ships, 1,628 tons. Six 4·7-in. guns, four 21-in. torpedo-tubes. Speed 45 knots. Carries 50 mines.
17—TURBINE class (SAURO and LEONE classes similar) : fifteen ships fitted for minelaying.
18—PARTINOPE and SPICA classes : thirty-two ships. Torpedo-boats fitted for minelaying. Speed 34 knots.
19—MIRABELLO and CURTATONE classes : six ships, 1,383 tons. Eight 4-in. guns, four 18-in. torpedo-tubes. Speed 35 knots. 100 mines.
20—ORSA class : T.B.s and submarine chasers fitted for minelaying. Speed 28 knots.

...pes of the warships which the Duce is holding for the expected invasion of Italy—battleships, cruisers and destroyers. From left to right in this drawing ...class, 1,620 tons; (in foreground) Grecale class of destroyer, 1,449 tons; (in centre background) cruiser of the Garibaldi class, 6-in. guns, 7,874 tons; ...but has probably been refloated since); a Littorio class battleship of 35,000 tons; and a Trento class heavy cruiser, of 10,000 tons—*Drawing by Montague Dawson*

So far this review has dealt only ...th figures of Italian strength and ...eakness, but figures alone can be very ...isleading in naval warfare. When ...e comes to examine the problem ...nfronting Italy from a geographical ...oint of view one finds the essential ...eakness of her position, a weakness ...hat is far greater than any mere dis...rity in Italian and Allied numbers.

Her coastline, dividing the Mediter...nean into two definite sectors, extends ...er something like 1500 miles in all, ...nd either the east or the west coast ...ay be the focal point of an Allied ...tack.



THIS IS THE NAVY WITH WHICH ITALY ENTERED THE WAR IN 1940. Many of these vessels have since been sunk or badly damaged in engagements with the Royal Navy during three years of heavy fighting in the Mediterranean. (For a key to the vessels in this drawing, see notes in box at left)

- GENERALI class minelayers (COSENZ and ABBA classes similar): 635 tons. Three 4-in. guns, four 18-in. torpedo-tubes. Speed 33 knots.
- "AUDACE," 629 tons. Seven 4-in. guns, four 18-in. torpedo-tubes. Speed 31 knots.
- MOTOR TORPEDO-BOATS (about seventy-two boats): speed from 26 to 47 knots.
- SUBMARINES: twenty-eight building or completing.
- FIERAMOSCA class: 1,340 tons. One 4·7-in. gun, eight 21-in. torpedo-tubes.
- CALVI class.
- SANTAROSA class: about ninety SUBMARINES. Built.
- "GIUSEPPE MIRAGIA," seaplane tender: 4,880 tons. Speed 21 knots. 20 planes.
- OSTIA class minelayer: four ships. 615 tons. 80 mines.
- MINESWEEPERS, 800 tons. Speed 13 knots
- MINESWEEPING TRAWLERS.
- "ERMANNO CARLOTTO," river gunboat, 180 tons.
- "AMERIGO VESPUCCI" and "CRISTOFORO COLOMBO," training ships.
- "SAN GIORGIO," coast defence ship, 7,232 tons. Four 10-in. and eight 7·5-in. guns. Speed 22 knots.

THE FRENCH WARSHIPS AT ALEXANDRIA WHICH HAVE NOW COME OVER TO THE ALLIES AFTER 35 MONTHS OF INTERNMENT. In the centre of this drawing is the old battleship "Lorraine," built in 1913; at the right is the submarine "Protée." Behind are the cruisers "Suffren," "Duquesne" and "Duguay-Trouin," and the destroyers "Fortuné," "Basque" and "Forbin"—*Drawing by Wm. McDowell*

These are the vessels comprising Admiral Godefroy's squadron, immobilised at Alexandria since the Fall of France in June 1940. All are now to fight with the Allies following on negotiations with General Giraud, and are now being overhauled to repair whatever defects may have followed on 35 months of immobility in Mediterranean waters. The battleship *Lorraine* is a vessel of 22,000 tons built in 1913 and armed with 13·4-in. guns: her speed was never great, as she was designed with a maximum of 21½ knots, which is quite inadequate for modern naval conditions: it is probably even less to-day. But she could prove very useful for bombardments. Amongst the cruisers are the 10,000-ton vessels *Suffren*, *Duquesne* and *Tourville* (the latter is not shown in the drawing above), and the 7,000-ton *Duguay-Trouin*: these are all fast modern ships which mount a goodly number of 8-in. and 6-in. guns between them and will thus prove valuable additions to our naval strength in the Eastern Mediterranean. The three destroyers seen above are all of 1,378 tons: torpedo-heads for these vessels are stated to be ready, and also for the submarine *Protée*, a modern vessel of 1,379 tons built in 1930 at Havre. On board this fleet, some 1,500 French sailors remained behind after the repatriation of their comrades to keep the ships in trim. It has been reported from Algiers that the Alexandria Fleet, re-equipped with new anti-aircraft and anti-submarine defences, may be used for convoys. But no definite decision has been, or can be, arrived at just yet

THE IMPORTANCE OF "MASTHEAD"

The Man who Sees the Enemy First—
Before the Captain or the Other Officers
—*A Special* Sphere *Drawing*

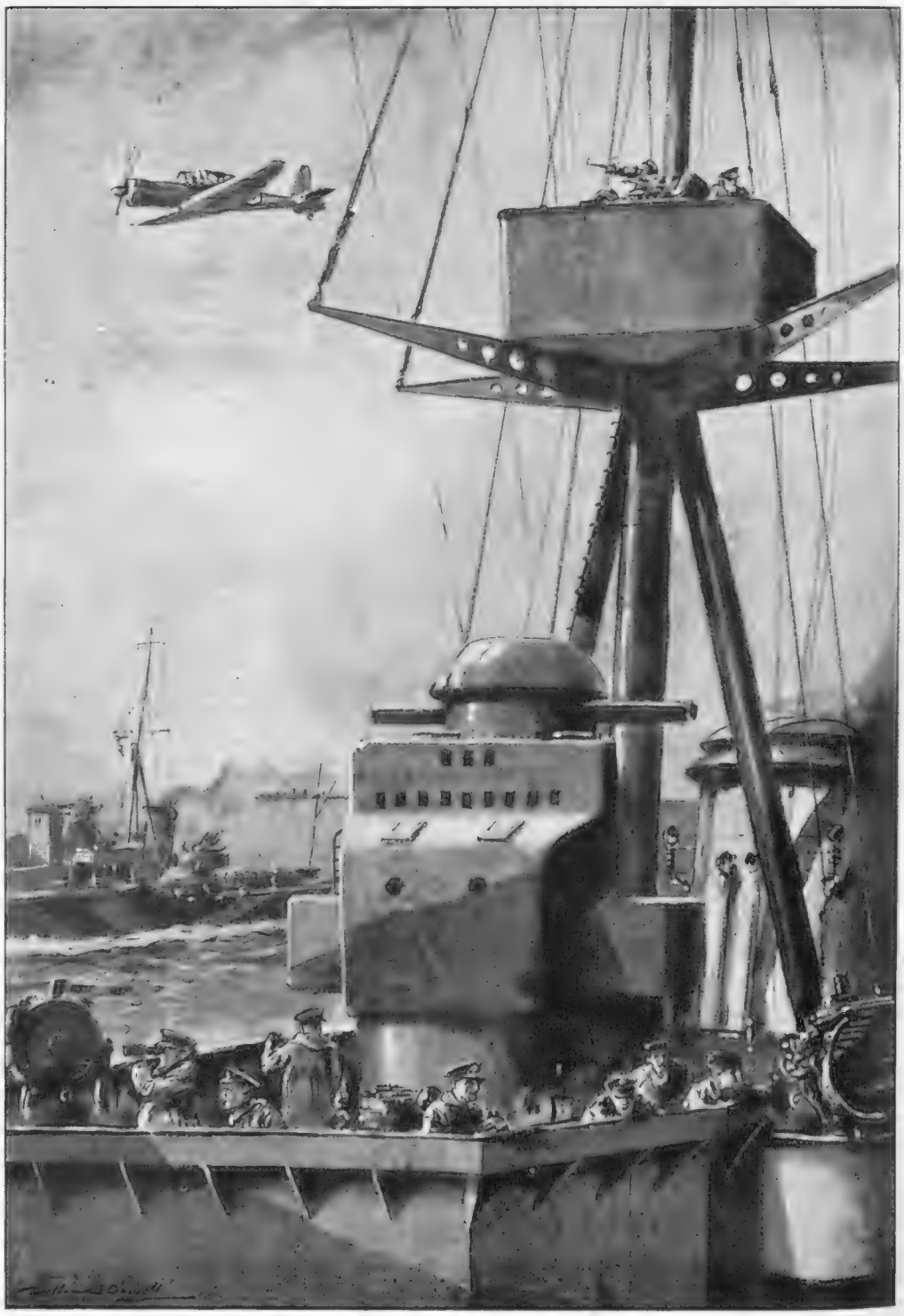
The drawing by Mr. Wm. McDowell reproduced on the right shows the upper portion of the bridge structure of a modern British cruiser. It is here that the captain and executive officers of the vessel take up their stations when the presence of an enemy is suspected and during the subsequent action. High above even this lofty station is a loftier—that of the masthead look-out, upon whom devolves the duty of warning the bridge the moment an enemy vessel is detected on the very far horizon or a low-flying aircraft comes into view.

THE OUTSIZE NAVAL BINOCULARS through which the look-out high above the bridge scans the horizon for enemy vessels or for low-flying aircraft. He communicates with the bridge by means of the substantial voice-tube below his powerful instrument

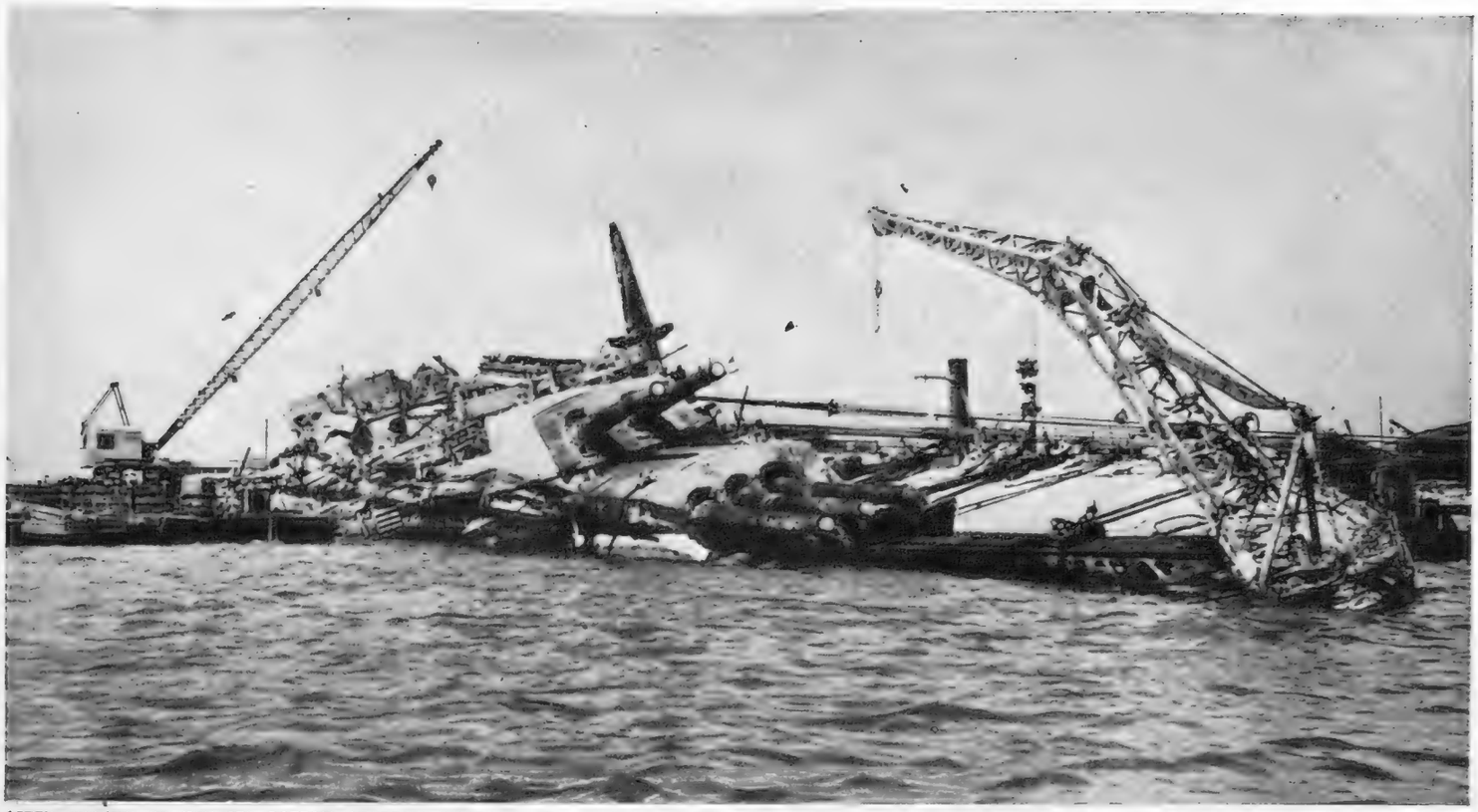
The enormous advantage of a high look-out station is indicated by the following: the height of the cruiser's bridge above the sea-level is usually about 35 to 40 ft., this gives the observer on the bridge a horizon of about 6 or 7 miles distance. Assuming that the weather conditions permit of good visibility, the topmasts of a similar vessel would thus be seen showing *above* the horizon at a distance of about 12 miles whilst the vessel is still hull down.

But, as the look-out in his masthead station is situated some 25 ft. higher than the bridge—that is, about 60 ft. above the sea-level—the extra height would actually double the apparent distance of the horizon. Thus, from the masthead, the same vessel would begin to show above the horizon at about 24 miles away.

If the two vessels were approaching each other at a speed of 25 knots, the masthead look-out of one would see the topmasts of the other a quarter of an hour before it was visible from the bridge itself—a most vital 15 minutes in any modern naval engagement!



On right—**HOW THE "MASTHEAD" LOOK-OUT OPERATES high above the bridge when a cruiser is at sea. It is from him that the first intimation comes of an enemy on the horizon some 24 miles away, long before the vessel can be seen by the officers on the bridge below**—*Drawing by Wm. McDowell*



AFTER RESTING ON THE SEA BOTTOM AT PEARL HARBOUR FOR EIGHTEEN MONTHS, the old battleship "Oklahoma" is brought up to the surface again. She was sunk during the Japanese air attack, when bombers treacherously assaulted the American Fleet as it lay at harbour. This picture shows how the huge vessel was hauled up, turned over to 15 degrees during the salvage operations

HEAVY CABLES, STRAINING UNDER THE TERRIFIC LOAD, SLOWLY RIGHT THE U.S.S. "OKLAHOMA" and bring her up from the harbour bed. The 29,000-ton vessel, here raised to an angle of about 15 degrees, was heeled over to an angle of 151 degrees when the salvage operations were begun

THE RAISING OF THE U.S. BATTLESHIP "OKLAHOMA"

Sunk by the Japs at Pearl Harbour on December 7, 1941, and Now Salvaged

At 7.30 a.m. on December 7, 1941, 150 Japanese bombers and torpedo-carrying aircraft treacherously attacked the American Fleet anchored at Pearl Harbour—even whilst diplomatic representatives at Washington were discussing Peace with the U.S. Government! As a result, nineteen American ships were sunk as they lay at their moorings. This typically Japanese trick aroused the fighting spirit of the whole American nation: it also brought instant action from American salvage engineers, who are amongst the best in the world.

Of the nineteen vessels sent to the bottom, no fewer than sixteen have already been brought up and returned to service with the U.S. Navy. The latest is the great 29,000-ton battleship *Oklahoma*, of which we give a series of pictures. This old vessel (she was launched in March 1914) was lying on the harbour bed at an angle of 151 degrees: covered with barnacles and mud, she has now been raised—as, indeed, Colonel Knox promised that she would be.

Oklahoma was set on fire when the Japs attacked, and she then capsized. Owing to her great weight, the feat of bringing her up was no light one.

THE BARNACLED DECK OF THE BATTLESHIP BREAKS WATER after eighteen months of submersion. The cables by which the ship was righted may be seen in the foreground encircling the 14-in. guns

VAST ACCUMULATIONS OF BARNACLES AND MUD are scraped from the decks of the "Oklahoma" whilst she is righted. Twisted wreckage of the decks and equipment also clutter the topside of the vessel

The AMERICAN CAPTURE of ATTU

The Island Near Kiska, in the Aleutians, on which the Japs were Wiped Out Within Three Weeks

First Pictures of the Fighting from the U.S.

Attu was one of two islands in the Aleutian group held by the Japanese. It lies some 200 miles to the westward of Kiska, on the southern side of the Bering Sea, and within the Arctic Circle. It is a foggy, rocky, ice-bound spot, but of great value from a meteorological point of view, and as a possible base for further operations against Kiska itself (where some 10,000 Japanese troops and workmen are thought to be in occupation). It might also be used, at some later stage of the war, for operations against Japan itself.

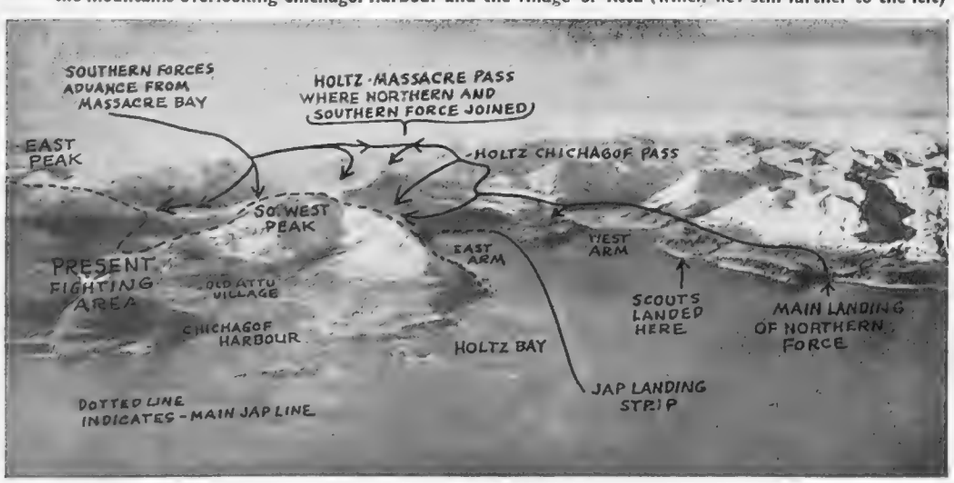
On Tuesday, May 11, the first U.S. landings were made on the island of Attu, and thereafter reports came through that a steady stream of reinforcements was being maintained under cover of naval and aerial bombardments. In point of fact, two main landings were made—at Holtz Bay, on the north side of the island, and at Massacre Bay. Between these two bays, at its eastern end, Attu narrows to a sort of isthmus. The Americans cut across this, advancing from both north and south, to isolate the eastern region from the main body of the island, an area of bleak and barren mountains.

Very soon the Japs were driven into a small hilly area near Chichagof Harbour: the enemy was surrounded and finally subdued amongst the sharp, icy peaks which rise here to a height of 1,700 ft. No reinforcement of the Japs was attempted—or, for that matter, possible—owing to the vigilance of the American warships and bombers. The enemy was annihilated: nearly 2,000 are known to have been killed, but—only eleven Japs were captured! Tokyo has announced that the Japs lost 3,000 in all.

The pictures reproduced on these pages are the first to be received in England from this newest battle outpost. They show the barren, inhospitable nature of the island, and indicate some of the difficulties which the Americans had to overcome in their short and determined onslaught.

A VIEW OF HOLTZ BAY AND PART OF CHICHAGOF HARBOUR, ON THE ISLAND OF ATTU, where a U.S. landing in force was made after a previous force had gone ashore at Massacre Bay (see key plan below). The Jap forces were driven from their strongholds in the high ground between the two arms of Holtz Bay (in the centre of the view above), after which the Americans took possession of the high ridge on the left-hand arm. The Japs then withdrew towards the little town, or village, of Attu, in the centre of Chichagof Harbour on the extreme left, where they at once became the target of terrific poundings from U.S. troops on the hills and ridges the latter had seized all about. Note the icy nature of this fog-shrouded island

AT THE VERY TIP OF ATTU ISLAND. An aerial view showing part of the region where heavy fighting took place. In the left foreground is Massacre Bay, where the first American troops landed and moved inland against the Japs. To the right is Cherikof Point: in the upper, left-hand corner are the mountains overlooking Chichagof Harbour and the village of Attu (which lies still farther to the left)



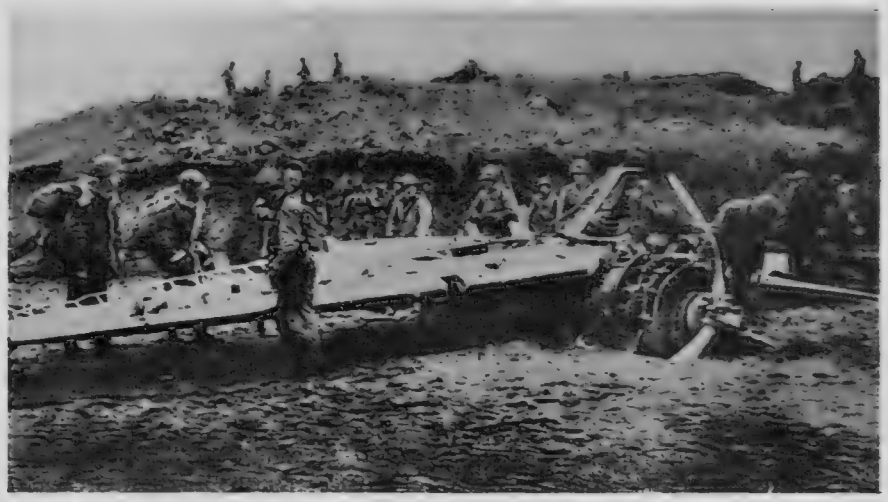
HOW THE AMERICANS LANDED: Heavily-laden assault boats are shown making for the bridgehead on strategic Holtz Bay. The Combat teams crouch low to avoid possible pot-shots by Japanese posted in the surrounding mountains

On left—

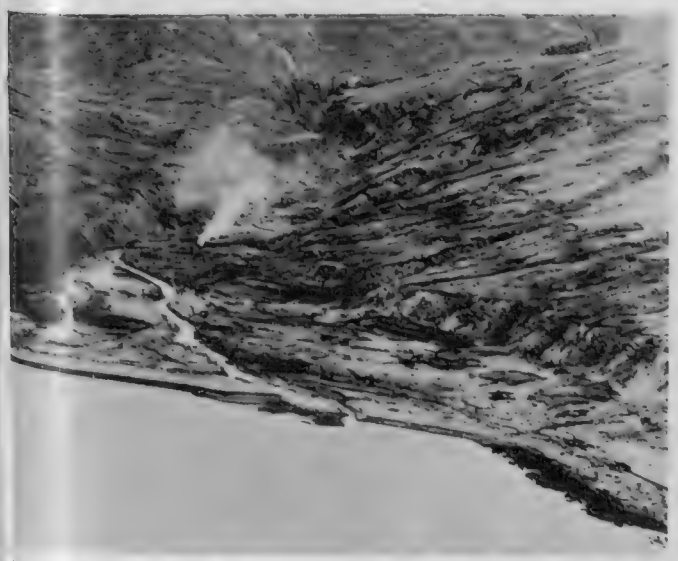
AN AERIAL VIEW OF THE NORTHERN SIDE OF THE ISLAND OF ATTU, including the area containing a partially-completed Japanese landing strip in Holtz Bay. Also seen are the beach used by the Americans for their landings and the territory where the enemy was pocketed around Attu village. Since May 11, when the first American Scouts landed, the Japs were pushed steadily to the sea: when the remnant reached the snowy hills above Chichagof Harbour, they were finally wiped out. This key view should be compared with the other aerial pictures reproduced above

MERICAN SOLDIERS AND EQUIPMENT ARE LANDED ON THE BLACK VOLCANIC BEACH AT MASSACRE BAY. From here they drove on to meet another American force which had been landed at Holtz Bay : the pincers met at Massacre Pass, and the Japs were then pinned within a pocket from which escape was not possible. The known Japanese casualties amounted to nearly 2,000 dead. The American losses in killed and missing were 400 exactly

OBILE LOUD-SPEAKERS DIRECTED THE ATTU LANDING. Warmly bundled in heavy clothing to ward off the Arctic cold, this U.S. officer (on left) directed landing operations with the aid of a powerful mobile loud-speaker. Around him, troops are piling stores brought by trucks from the landing-barges. Deeply-creviced, steep mountains jut upwards in the background : these were used by Jap snipers to harry the Americans



A WRECKED ZERO FLOAT-PLANE WAS FOUND BY THE AMERICANS AS THEY LANDED AT HOLTZ BAY. It had been machine-gunned by attacking U.S. planes several days before the troops landed on the fog-shrouded Aleutian island. The Japs had pulled it up on to the beach and flopped it over on its back



HICHAGOF HARBOUR, ATTU. From these ridges surrounding the harbour and village, the last units of Japs left fighting on the island were steadily and surely dislodged. This aerial picture was taken under heavy anti-aircraft fire. The smoke below is from fires caused during a previous raid by Lightning aircraft

THE AMERICAN LANDING-PARTY AT MASSACRE BEACH RETURN THE FIRE OF JAP SNIPERS IN THE HILLS. The enemy, skilfully camouflaged, would come down to the edge of the protecting line of fog, and then fire from crevices in the rocks. This, of course, was before the two arms of the American pincers closed in on the Japs

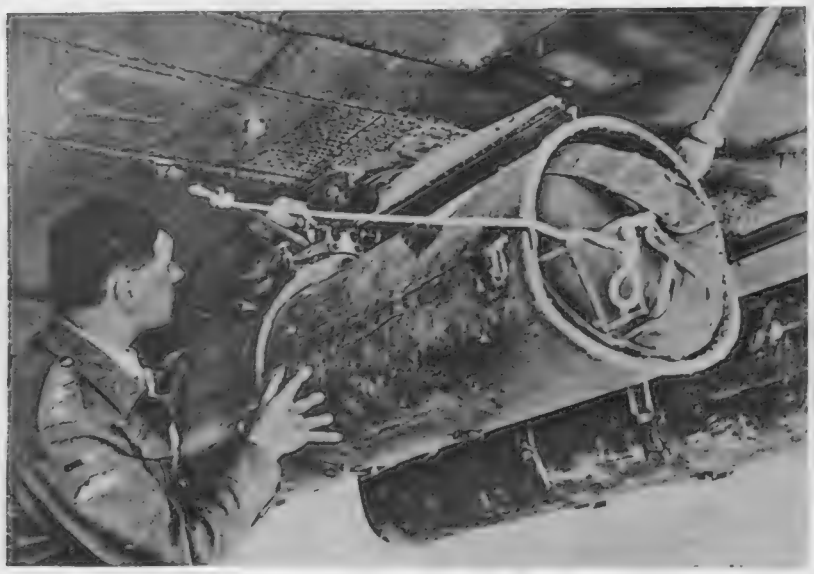
AN ATTACK ON A NEAR-HOME TARGET: Venturas of the R.A.A.F. attacking Zeebrugge on the Belgian coast, famous for its prominence in the last war and now the home of coke-ovens which are helping the Nazi war-machine.—*Drawing by W. G. Whitaker*

The War by Air

FLYING OPERATIONS and INCIDENTS

Portrayed by Sphere Artists

During our recent air offensive over Occupied Europe, the name of Zeebrugge has figured more than once. The reason is that this Belgian port contains a number of coke-ovens which provide very worth-while targets quite near home. In the drawing by Mr. Whitaker above, a force of Ventura bombers operated by Australian pilots is seen carrying out an attack on the port and town. It was here that the British Third Cavalry Division landed in October 1914: later, in German hands, it became a centre of the enemy's coastal defences and a submarine base. It was frequently bombarded by British war vessels; and on April 23, 1918 (St. George's Day) a successful attack was carried out by a large force under Admiral Sir Roger Keyes which resulted in the harbour being completely blocked to submarines and destroyers. This channel, long since cleared of its obstructions, is seen in the drawing above behind the Memorial



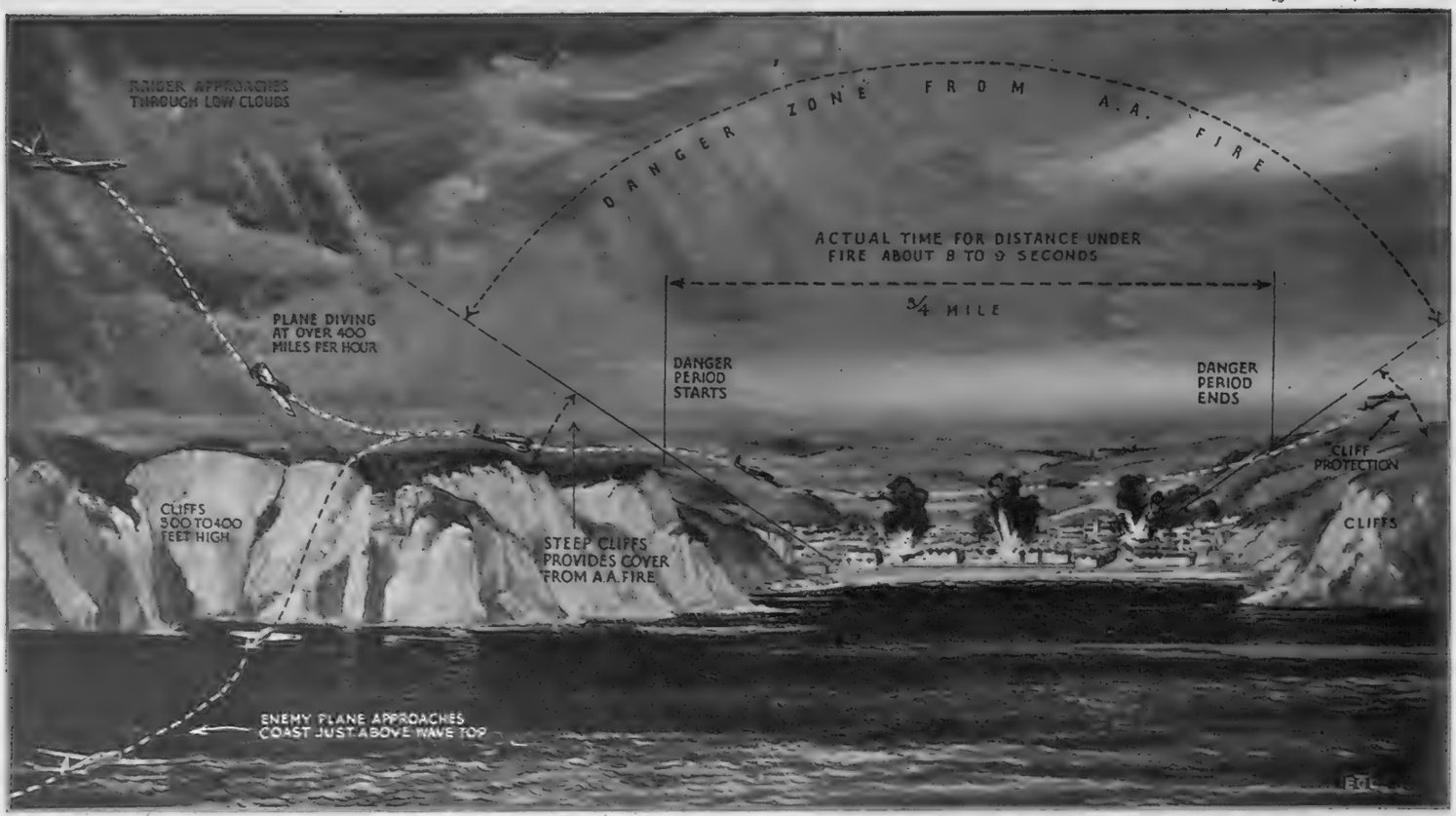
PARATROOPS IN THE MIDDLE EAST: *Above*—**An officer examines the equipment containers which are fixed to the plane and released from inside the latter.** *On right*—**Paratroops following each other at extremely short intervals.** Before a paratroop jump there is a great deal of the most careful preparatory work to be done. Men cannot jump and land safely carrying guns and other heavy equipment: these must be dropped separately. Such equipment is packed in special containers fastened underneath the plane. Then the paratroops enter the plane; it takes off (probably at night), and the men prepare to make their jumps over the right spot. They must jump very quickly, one after another, so that they land reasonably close together

ODDS WHICH STIR THE IMAGINATION: A single British Beaufighter takes on five Ju. 88's off the Sardinian coast and beats them in unequal combat, destroying one for certain and probably another two—for good measure!—*Drawing by Roland Davies*

The incident depicted in the drawing above came during a recent day of very successful operations against the *Luftwaffe* and Italian Air Force in the vicinity of the Tyrrhenian Sea. After great activity over Sicily and Sardinia, in which all types of bombers and fighters took part, a single Beaufighter was patrolling the Sardinian coast towards evening when five torpedo-carrying Ju. 88's were sighted coming direct at the lone British plane. The Beaufighter attacked: one Ju. 88 was destroyed, a second was probably destroyed and a third was damaged. The Beaufighter is, of course, a very powerful aircraft—but so is the Ju. 88! This very successful fight against heavy odds came as the crowning point in operations which resulted in the one day in the destruction of over seventy Axis aircraft for only four Allied planes. The drawing by Mr. Davies above gives a good impression of the rocky nature of the Sardinian coast

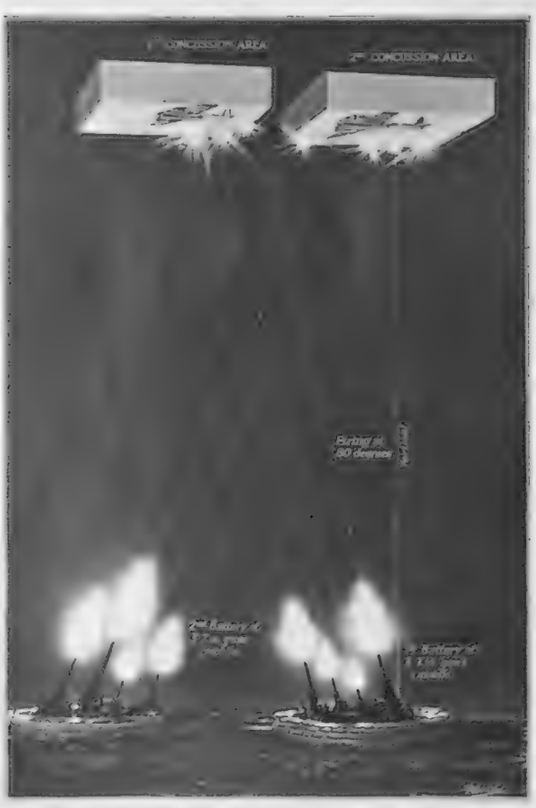
THE NEW SPITFIRE HAS CLIPPED WINGS. The most distinctive feature of the famous Spitfire fighter has always been its pointed wings which distinguished it clearly from other types. Now, it is revealed, a new type of Spitfire is in use and has already distinguished itself in the recent fighting in Tunisia: here is the new version as seen from the ground. Both the Mark V and Mark IX are now built in this fashion

On right—**A CHANGE OF NAZI TACTICS. The U-boat now seeks to defend itself by A.-A. fire on the surface instead of crash-diving when attacked by aircraft at sea**—*Drawing by Roland Davies.* From recent reports concerning the progress of the war at sea, it would appear that U-boats are now becoming so shy of depth-charges that they are preparing to take the risk of destruction on the surface rather than crash-dive under attack from above. "This is a complete and most significant reversal of accepted submarine practice," says Commander Kenneth Edwards. When a U-boat's hull is crushed in by depth-charges, the men stand little chance of survival; but some may be saved if the vessel is on the surface and destroyed by bomb or gunfire. Consequently, the bigger U-boats are now being armed with heavier A.-A. guns and are capable of putting up a stiff resistance. The incident depicted above occurred in the approaches to the Bay of Biscay. Sunderland "F" sighted the periscope of a U-boat in the act of surfacing and attacked at once, despite the flak from the submarine's guns. Depth-charges straddled the U-boat, which made an "S" turn to port, continuing to fire throughout. Then Sunderland "P," another Australian, went in to attack. Shortly afterwards the U-boat started to sink horizontally, despite the spirited nature of her resistance on the surface



HOW THE GERMAN SNEAK-RAIDERS USE THEIR HIGH SPEED WHEN ATTACKING SOUTH-EAST COASTAL TOWNS. The time of the actual attack by any individual aircraft may be only about eight to nine seconds: during that short period the anti-aircraft gunners have to range their guns and attempt to hit the swiftly-moving bomber—a difficult undertaking—*Drawing by E. G. Lambert*

When a coastal town in England's front-line danger zone in the south-east is attacked by enemy raiders, the duration of the attack is usually very short. The fast-flying raiders—usually fighter-bombers with a speed approaching that of our own Hurricanes and Spitfires—come in low over the sea, or drop down out of low cloud-cover. In either case the period of the attack, and the consequent danger to the inhabitants, is very short. The time during which the enemy is actually over the selected targets is probably not more than eight or nine seconds, during which the fast aircraft will have traversed a distance of about three-quarters of a mile. Unfortunately, this is time enough to drop their whole bomb load, although aiming is necessarily erratic owing to the helter-skelter nature of the raid. When the raider has actually passed there is still a danger for the coast town's inhabitants—that from shrapnel falling over a wide area



HOW THE BATTERIES OF A.-A. GUNS FIRE IN GROUPS OF FOUR, so that each battery can cover the "blind spot" immediately above its neighbour

The War by Air

BRITAIN'S ANTI-AIRCRAFT GUNS

The Last Word in Size and Hitting Power

Described by E. J. VILLIERS

THE most unlikely weapons have "downed" enemy planes at times, even though some of the victories possibly come in the same category as Mr. Tupman's partridge at Dingley Dell. A single searchlight, even a Southern Railway locomotive (which, being shot up, retaliated by sending a chunk of boiler plate through the hedge-hopping marauder), are among the improbable victors.

Rifles occasionally, and Bren guns and similar weapons quite frequently, succeed in downing low-flying raiders. But the standard A.-A. guns, on which the defence of the United Kingdom is based, are quite sharply-defined specialist types. The two smallest A.-A. guns proper are the Hispano 20-mm. and the Bofors 40-mm. quick-firers, officially known as L.A.-A. (light anti-aircraft). Next comes the 3-in. gun, then the 3·7-in., which is really our standard A.-A. gun, and then the 4·5-in. heavy A.-A. The Hispano and Bofors small quick-firers first mentioned are mainly, though by no means entirely, daylight guns. Their crews are virtually the only A.-A. gunners who nowadays see the enemy they are firing at. The larger batteries rarely go into action in daylight to-day—because the targets so rarely present themselves. Since searchlights are not now used in conjunction with heavy A.-A. guns (but almost entirely to guide night-fighters), the men on the "heavies" simply take aim and set their fuses according to the orders of the G.P.O.—Gun Position Officer. Quite literally, the gun crews work in the dark. Each battery has its area of action; as a hostile plane is reported approaching the outer fringes of the area, the crews prepare to fire. As soon as the plane is within the area, fire will be opened with the bearing and angle (elevation) and fuse-setting (height of shell-burst) being constantly altered according to information received. The battery will continue to fire as long as the plane is within its action area, unless some other circumstance, such as the arrival of night-fighters, intervenes or the plane is destroyed. How do the batteries know the plane has been destroyed? Well, in the days when sound location was the principal locating method for night-raiders, if the sound ceased to be received, the plane was either destroyed or out of range. If no other battery continued to sound-locate the raider, the probability was in favour of destruction, which would soon be confirmed by A.R.P. or police reports of the crashing plane. Radiolocation has made this much more certain, however. As long as the plane exists it can be plotted. If the plots of a plane flying at normal heights suddenly cease, it can be taken for granted that the plane has suddenly ceased, too!

Most of the 3-in. guns are modernised survivals of the last war—good guns, but not really comparable with the much more modern and more numerous 3·7's. This is the gun, incidentally, which was used as a field-piece in North Africa.

As used in Great Britain for A.-A. purposes, the 3·7 is usually sited in groups of four guns, with a crew of nine men per gun. The complete "round" (shell plus case and propellant) weighs over 50 lb. A trained crew can load and fire at up to twelve rounds a minute, which is hard physical labour of no mean order. When they first leave the breech they are hot enough to give a nasty burn, but the gun crews keep clear of them by second nature. The shell itself weighs 28 lb. and has a delicate time-fuse which explodes it after a given time of flight. Since the speed of the shell is known to very close limits, the clock fuse enables the height of the burst to be fixed with great accuracy. The 3·7-in. has an upper ceiling of about 39,000 ft., which the shell reaches in under 50 seconds. Though the gun is so mounted that it can fire "all round the clock," its maximum elevation is 80 degrees—it cannot fire at a plane that is absolutely vertically overhead. Gun sites are arranged to have overlapping fields of fire, however, so this safety zone is really non-existent.

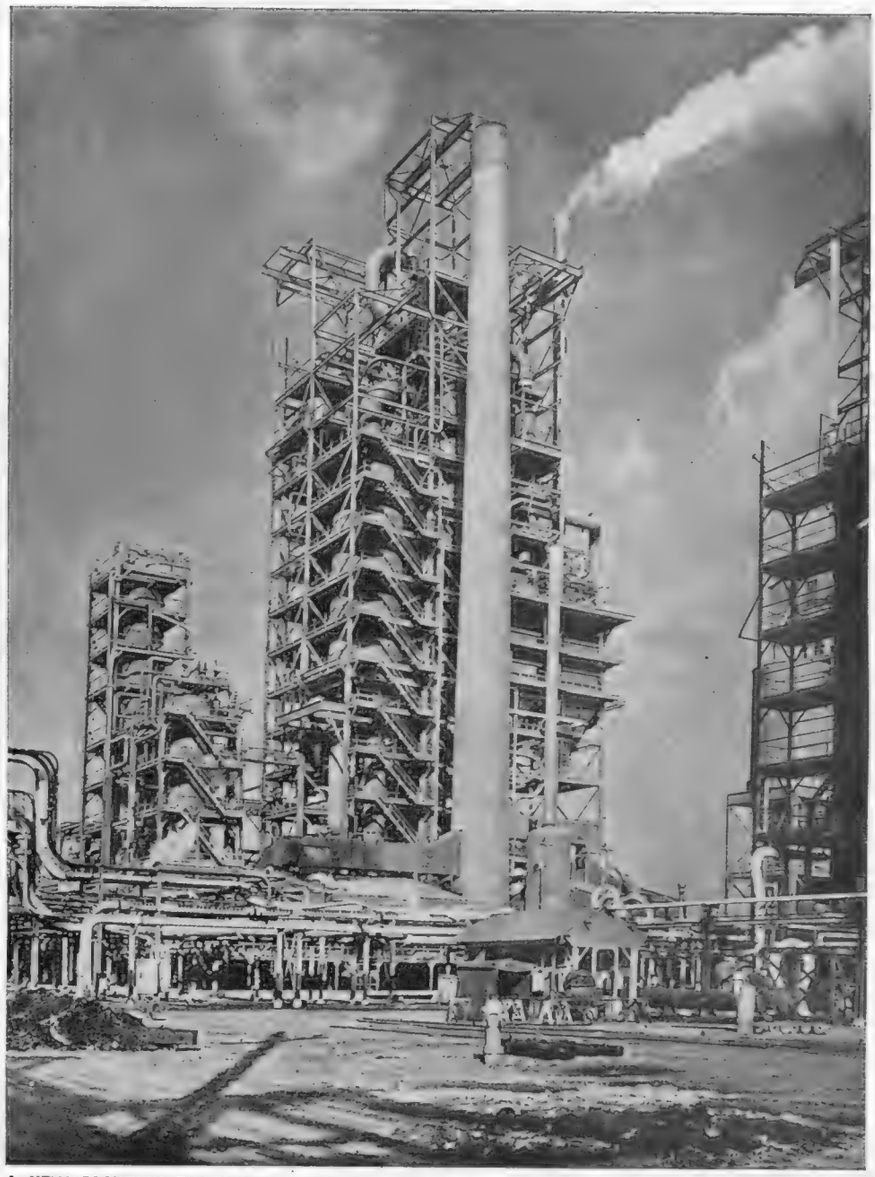
Weather makes no difference to the accuracy of heavy A.-A. fire with modern methods, though some gunners hold quite seriously that their shells travel faster in rain. If so, the reason for it is still undiscovered.

WEATHER MAKES NO DIFFERENCE to the accuracy of heavy A.-A. fire, despite that some gunners still believe that their shells travel faster in rain

ANGLO-AMERICAN EFFORT

News pictures from both sides of the Atlantic, showing phases of the joint war by air and by sea

"STUKA" TAKES A LAST LOOK AT ENGLAND before crossing to the United States by Air : The Americans who have flown the Flying Fortress "Memphis Belle" on twenty-five missions against the enemy were honoured a few days ago by Lieut.-General Jacob L. Devers (who commands the U.S. Army in the European Theatre of Operations), by Major-General Ira C. Eaker (in command of the U.S. Eighth Air Force), and by other high-ranking officers prior to the departure from an American airfield in England of the aircraft and its crew for the United States. It is expected that the crew will then take part in bond-selling drives and air-training work. Above, the crew's mascot (who has been on several operational flights with the "Memphis Belle") is taking a last look at England from the waist-gunner's window before the take-off



A NEW PLANT IN THE UNITED STATES for the development of a super-petrol for Allied fighting aircraft : A brand-new plant, towering in the sky, has recently been put into operation on the American East Coast, for the refining of petroleum by the "fluid catalytic cracking" process. It is one of thirty-three similar units either built or in course of construction for this purpose. The above buildings have cost 6,000,000 dollars to erect : they will now produce the raw materials for aviation spirit, synthetic rubber and high explosives. Based on the process of cracking the molecules of crude oil so as to rearrange their order, the greatest advancement it offers is petrol of 100-octane content, with which planes can fly faster and with a greater bomb-load than with the former 87-octane fuel. On the basis of a 1,000-bomber raid, U.S. scientists say that the new petrol will enable planes to carry 5,000,000 lb. of additional bombs as well as to fly farther

BRITISH ESCORT VESSELS HOME AFTER AN ANTI-U-BOAT TRIUMPH IN THE ATLANTIC : Recently an Admiralty communique told how a west-bound Atlantic convoy was successfully defended by escort ships of the Royal Navy and aircraft of the Royal Canadian Air Force against a series of determined and sustained attacks by powerful forces of U-boats. The intermittent attacks and counter-attacks extended over eight days and nights : four U-boats are known to have been destroyed, four others were very probably destroyed and two more probably destroyed. This picture shows some of the crews of two of the Flower class corvettes which helped to score such outstanding successes. They are from H.M.S. *Snowflake* and H.M.S. *Sunflower*, and are here seen after their safe return to base

THE CHINESE SAILOR WHO SPENT 131 DAYS on a raft in the open Atlantic : This is Poon Lim, a twenty-five-year-old Chinese sailor who has just spent 131 days drifting aimlessly and helplessly in the open Atlantic, before he was rescued off the coast of Brazil. He was a steward aboard a British merchantman which was torpedoed on November 23, 1942. Poon Lim was washed overboard, found a life-raft and was saved, but he saw none of his shipmates. He lived on fish caught with a bent pin and with the spring of his flashlight for bait. A canvas gave him shelter and collected water for him. His ordeal lasted 48 hours more than man has ever before been known to survive in a lifeboat or on a life-raft. In spite of this Poon Lim managed to board the rescue ship under his own power and walked three days later, when he was landed in Brazil in April last. His only complaint was that he suffered "dizzy spells"!

AWAY FROM THESE WARS . . . .

Memories and Thoughts of the Years Between

—A Fortnightly Causerie **By J. G.**

PERENNIAL Best-seller.—I always enjoyed Victorian melodrama, even more than late Georgian skits on Victorian melodrama. *The Lights of London* were more lurid than the skits upon them. Indeed, you can't lay on the greasepaints thicker in skit than those old Victorians laid them on in deadly earnest (or shrewd acumen). And in the melodrama of literature also I still divert myself. Mrs. Henry Wood, for example. I wish that Max Beerbohm would do for her what he did for Ouida so courageously and so wisely in 1899. She wrote at least three dozen best-sellers, such as: *East Lynne* (400,000), *The Channings* (180,000), *Mrs. Halliburton* (112,000), *Lord Oakburn's Daughters* (105,000).

I have just finished the three volumes of her *Pomeroy Abbey*. All her novels are *incredible*—the *mot juste*.

Incredible to us to-day, because we cannot conceive of an educated reading public which could gobble them down seriously, yet we accept it by faith that she shrewdly sized up public taste of her day and gave the public what it wanted. What that public wanted was one more revival of the Gothic novel of mystery and horror, thought to have died for ever with Mrs. Radcliffe and Walpole (*Castle of Otranto*, etc.), and to have been laughed out of court by Jane Austen in *Northanger Abbey*.

We may take it that to the shrewd authoress, and to her public also, her novels were "incredible." Her readers wanted the impossible, and got it. Utterly ignorant as she was of almost every British institution on which her plots turned—from the processes of Law to the usages of the aristocracy—she was not so ignorant as to be unconscious of her ignorance. She throve on it deliberately, and her readers, by no means all of them uneducated and uninformed, co-operated with her in a common deception, in which all conspirators stood to gain, she in cash and they in "escape" from the sordid realities of the Industrial Revolution.

Pomeroy Abbey.—Thus, *Pomeroy Abbey* is not a novel in the Radcliffe-Walpole tradition. It *is* the Gothic revival in its most virulent form. It out-Radcliffes Radcliffe.

Pomeroy Abbey is the ancient seat of a Catholic family, long established on a remote part of the coastline of Britain. The "Lords of Pomeroy" do not sit in the House of Lords, nor do their children bear courtesy titles. Otherwise, they enjoy all the privileges of Victorian ducal families—with additions. Their "menials" wear, even at breakfast, liveries of "purple velvet and silver," and the reigning lord has the special right to embroider his coat-of-arms on his vests and handkerchiefs. When the story opens, the reigning lord is in residence, and has a family of four strong sons and a daughter. Soon enough the Pomeroy "death-flag" is raised to his memory on the keep; and before many chapters are completed, the capacity of the Abbey is proved by the fact that, while one immense wing of it is in the occupation of the family spectres, other wings or "fronts" house the families and "menials" (in purple, etc., liveries) of three or four of these sons, who have succeeded in turn to the great heritage only to be done to death, outlawed, or otherwise disposed of, *not* according to law. The youngest son, indeed, survives and occupies the South Wing, spending his time in negotiating with the Pope to secure the lordship for himself by bastardising the son and heir of a deceased elder brother (in the West Wing). This youngest son, while plotting, contemptuously "refuses any revenues from the estate," but sees nothing anomalous in "shooting the preserves" when he needs recreation from his papal plots. The *dramatis personæ* of the melodrama include a vast number of dukes and earls and their escorts, whose manner of thought and speech, and whose treatment of servants, governesses and doctors are described with an exuberance of imagination which may have some bearing on present-day ignorance of (and interest in) that much abused and heavily-taxed Estate of the Realm. (Yet even the Victorian kitchen-maid well knew that it was an "idealised" picture—none better, indeed.)

For the rest, the cast includes ghosts galore, "gentleman gamekeepers," Seneschals, grooms of the chamber (one per wing), jolly Catholic priests after the pattern of *Ravenshoe*, family coachmen from *Cinderella*, witches, and genteel companions or waiting-women. In short, Mrs. Wood's success as a best-seller (400,000) jolts our belief in the stern discipline of that school of character, the Victorian Age. There was a secret cupboard in every velvet-fringed and mahogany home, containing, if not skeletons, at least forbidden sweets. . . . . She had not a tithe of Ouida's genius, knowledge and unrestrained imagination, but, like Ouida, she always chose the "tuppence coloured" and laid it on with a trowel. She knew her public. She was very versatile. She tried all kinds of scenery, though she stuck to a single line in plots, and often enough that plot halts and stumbles before the novel is in its stride. She specialised in the disappearance of heirs and maddening misunderstandings and impossible heroic altruism. If she preferred baronets, and gave them their name for *badness*, she was equally at her ease (or dis-ease) with dukes and earls. ("Her scented handkerchief was embroidered with the *coronet of an earl's daughter.*") And sometimes she would take a leaf from Gaskell or Trollope, and paint the sorrows of the poor clergy or the victims of the industrial revolution. But always the plot turns on clumsy misunderstanding and disappearances and absurdly altruistic sacrifices of happiness or other rights. She certainly borrowed from her contemporaries. But one thing she had no need to borrow—the power of telling a story. In that she was the peer of Conan Doyle. After all, the literature of the novel is, and always has been, based on recreation and diversion. It is designed to "take you out of yourself." No one ever did that better than Mrs. Wood, and she deserved her success. And so it is that, incredible as she always is, we still gobble up her absurdities and escape with her into her world of fantasy, which, compared with our own, is sheer common sense.

MING RETURNS TO LONDON. The very popular Giant Panda has returned to the Regent's Park Zoo from Whipsnade: she is now ready to do her tricks before an admiring public during the summer season. Here she is seen contentedly gnawing one of her favourite bamboo shoots soon after taking up her old quarters at the Zoo

Recreation, Not Instruction.—This clearly is the solution of what might seem a mystery. We have made advances in public education since the Mid-Victorian era, and it would be reasonable to suppose that a far wider and more enlightened public would choose for survival among long dead female novelists those who provided, in their day, solid, "grown-up" fare, for educated people, and not *feuilleton* snacks. But not at all. The clever, political novelists—George Eliot, Mrs. Humphrey Ward, and their kind — gather dust on their shelves, while Mrs. Wood and Miss Braddon and Ouida are ever on the move, gathering thumb-marks and dog's ears. Political propaganda or social injustice not only date the novelist's art, but bore his readers of a later date. *Helbeck* was once a bombshell, but to-day a damp squib, and even *The Mill on the Floss* is "sorry stuff" to escapists from this year of grace.

Yet George Eliot and Mrs. Ward were highly educated thinkers, live-wire politicians and social reformers, the peers of our parliamentary and executive women of to-day. Reason would that we should choose these ladies, and not the facile and ignorant enchanter of Victorian kitchen-maids. We do not. The novel is for recreation. Use it for propaganda and you sign its death-warrant.

But that is not the whole story. Almost any *feuilleton* writer, with a bare minimum of the stock-in-trade, could produce a "shocker" capable of satisfying the "kitchen-maids" of the writer's own little day, but to produce one which would survive the changes and advances of future generations, *that* needed, and needs, higher quality—a genius for story-telling that conquers absurdity and inconsistency and exaggeration, a genius for drawing character and producing atmosphere; in a word, the power to create a little world, which, however absurd and fantastic, is self-supporting and self-contained—a country open to refugees from any succeeding age. That is *genius*, and genius has nothing whatever to do with education, or, indeed, with intellect.

The New London Stage Productions

Reviewed by PHILIP PAGE

"*THE IMAGINARY INVALID.*"—Three hours after leaving a nursing-home, where I had spent a couple of months, I found myself in the stalls of the Westminster Theatre watching an infirm individual sitting on the stage in an invalid's chair, padded with cushions, a table-load of medicine bottles at his side, and a stout walking-stick in his quivering hand, arguing querulously with doctors. *The Imaginary Invalid* (adapted from the famous Molière comedy) may not seem an ideal type of entertainment for one who had recently been a very real invalid. But I found Mr. Donald Wolfit's production such a merry affair, and his own performance of the supposedly ailing Polidor Argan so diverting, that I soon forgot my own troubles and discomforts. The old play is excellently acted, with Mr. Peter Jones (as the doctor's son), Miss Rosalind Iden and Mr. Eric Adeney to the fore.

No actor is doing better work just now than Mr. Wolfit. Recently we saw his fine King Lear at the St. James's. He is to follow Molière with Ibsen in a few weeks' time.

Case 27 V.C.—The following night to the Comedy Theatre—without comedy. The "case" in the above title is a medical case, and all but one scene in the play takes place in the house of a doctor. Of course, that *would* happen. But it was also a mental case (and I must hasten to add that it bore no resemblance in any respect whatsoever to my own purely physical ailments). A young soldier gets a bash over the head, goes potty, is persuaded that he is able to perform miracles, and, what is more, he *does* perform miracles. I found the play well acted, but far-fetched, pretentious and rather dull.

Hi-de-Hi.—The curtain rose on one scene of Jack Hylton's new revue at the Palace Theatre to show Miss Florence Desmond lying in bed, a nurse on one side of her and a doctor on the other, with a temperature chart pinned on the wall. A nursing-home, in fact.

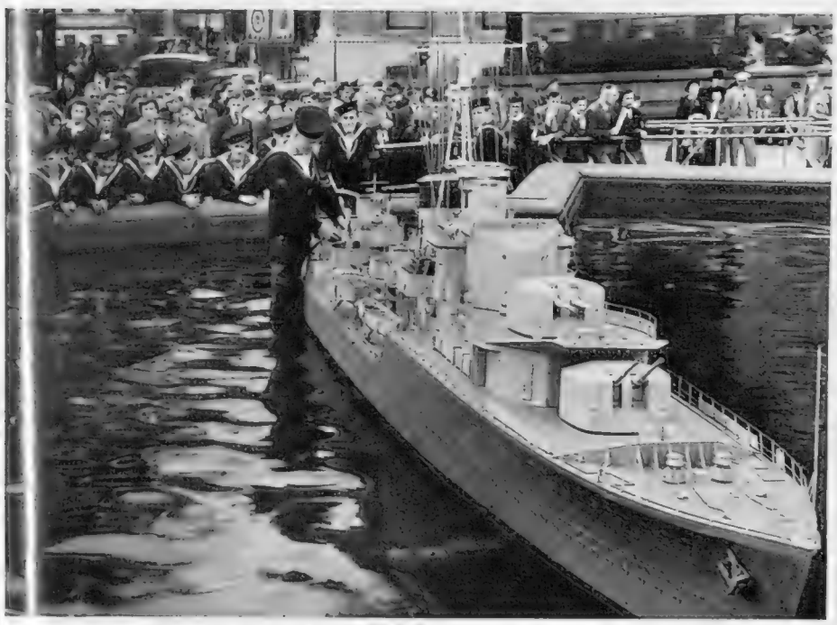
However, the rest of this cheery show makes Harley Street seem a long way away, and Miss Desmond is up to her usual fine form in plenty of less depressing surroundings. Besides, there are Messrs. Flanagan and Allen, whom I have never seen funnier; "Monsewer" Eddie Gray, that inimitable droll and nimble juggler; Mr. Clarence Wright, good singer and actor; piquant Miss Roberta Huby, and platoons of pretty girls, catchy tunes and attractive scenery. I particularly liked Mr. Arthur Ferrier's "Dumb Blonde" decor. A grand entertainment.

The Moon is Down.—A solemn gentleman with a grey beard is the first person one sees on the stage of the Whitehall Theatre in John Steinbeck's grimly-interesting play of a Nazi-occupied country. I had my suspicions, and I was not wrong, for a glance at the programme told me that this was "Dr. Winter" (played with convincing dignity by Mr. W. E. Holloway). But the doctor does not talk shop and medical matters do not obtrude. The play lacks dramatic force, because it paints a picture rather than tells a story. But it should be seen, and there are admirable performances by Mr. Lewis Casson, Miss Carla Lehmann, Mr. Karel Stepanek and many more. My only complaint is that four of the five Nazi officers were represented as decent, sympathetic fellows. That is both over-generous and inaccurate.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

THE QUEEN AT TWO LONDON FUNCTIONS: *And Other New Pictures From the Home Front*

MAKING THE LAUNCHES FOR THE AIR-SEA RESCUE SERVICE. Both men and women co-operate in this work at a riverside yard, where the keels are laid, the frames erected and the engines installed. When the constructional work is finished, the launches are painted and then outfitted with their safety guns. Here an almost completed specimen is receiving its final touches at the hands of a party of women



A NAVAL SPECTACLE IN TRAFALGAR SQUARE. A scene during the Salvage Week Exhibition : Sea cadets appear to be highly interested in a 30-ft. model of a destroyer in one of the fountain basins in the Square. This model was used for certain of the sequences in Noel Coward's recent naval film, "In Which We Serve"

AN ARTIST OF THE A.T.S. : Corporal Schmolle painting posters of German uniforms from dummies seen in the background. Four of the Corporal's previous paintings of A.T.S. and military subjects have been bought for the nation, and two have been hung in the National Gallery. During her year's service, Corporal Schmolle has worked in an Army Camouflage Office, where she is a draughtswoman. She is a Londoner and was trained at the Central School of Arts and Crafts

A CHARMING STUDY OF THE QUEEN AT THE ROYAL ALBERT HALL. When Mr. R. S. Hudson, Minister of Agriculture, addressed the National Federation of Women's Institutes, Queen Elizabeth was a listener—and a speaker—at the meeting. In this picture, she is seen on the platform : behind her, the Minister is talking to Lady Denman

THE QUEEN AT THE ALLIED NATIONS' SUMMER FAIR. Last week, the Red Cross and St. John War Organisation opened a Summer Fair in Clarence House. The Queen was one of the visitors and chatted to some of the stallholders on duty. Here she is seen at the Chinese stall, chatting with Madame Wellington Koo, wife of the Chinese Ambassador in London

The World of Books—By Vernon Fane

EIGHT BOOKS FOR DIFFERENT MOODS

Miss Mary Lavin's Masterly Short Stories; Theatres of the U.S.S.R.; The Experiences of a Soldier and a Pilot; Three Novels and a Thriller

IN his preface to Miss Mary Lavin's book of short stories Lord Dunsany writes that he had "no advice whatever to give her about literature; so I have only helped her with her punctuation, which is bad, and with her hyphens, about which she shares the complete ignorance that in the fourth decade of the twentieth century appears to afflict nearly everybody who writes. Only in these trivial matters do I feel that I know anything more about writing than Mary Lavin."

He goes on to say that although he has had much work submitted to him by young writers, in only two cases has he felt sure that he was reading the work of a master. TALES FROM BECTIVE BRIDGE (Joseph. 8s. 6d.) is the work of one of these two writers, and her first published book.

They are a collection of short stories about Irish village life, exquisitely written, something in the manner of Tchekov or of Katherine Mansfield. Each one concentrates on a momentary fragment of experience; impossible to retell here and difficult to analyse. They lie somewhere between the borders of fantasy and common sense, and they have been imagined and observed by one with a jewel-like quality of restraint and simplicity. They are frail rather than robust, but they have undeniable charm and a natural rhythm.

THE NEW SOVIET THEATRE (Allen and Unwin. 12s. 6d.) may well be regarded as an authoritative textbook on its subject. Mr. Joseph Macleod claims for it that it is no more than an interim report which he has attempted in the absence of, as he puts it, any account from better qualified people. He has taken as his starting-point the year 1937 to describe a distinct phase of the Soviet Theatre, which he feels ought to be recorded, and makes it clear that this period is bounded only by the "temporary and partial interference of the Fascist invasion."

Mr. Macleod writes with what may seem to the uninitiated to be encyclopædic knowledge, and he has kept in mind many of the questions which he has been asked while lecturing on the subject in this country. His lucid and graphic style make a study of this volume almost as entertaining as one of the performances which it describes.

INFANTRY OFFICER (Batsford. 6s.) is an odd and interesting little book. It has been written by an anonymous soldier, whose own experience of Sandhurst, in Belgium in 1940, and in the evacuation from Dunkirk this is. In 1942 as the book ends, he is taking part in a Commando raid on the coast of France.

It is a convincing account of these experiences, though as a personal history it lacks form and coherence. One thing that it certainly does not lack is that kind of realism reminiscent of *All Quiet on the Western Front*. The author, who writes with all the gusto of a young man to whom active soldiering is a complete profession, pulls none of his punches, and has an almost exaggerated respect for the startling impact of profanity. However, we should know by now without Sherman's reminder that war is hell, though this unknown author would go a long way towards convincing anyone who was undecided.

I remember Miss E. M. Ward as one who wrote with great affection of Romney Marsh, and in her present novel, ISLE OF SAINTS (Methuen. 8s. 6d.), she has turned her talent for friendly and uncritical appreciation to a story whose scene is the wilds of Cardiganshire.

Here and there during the story there is a fleeting acknowledgment that this country is engaged in war, though by no means total war, but for the most part the Wales which her characters inhabit is a remote land where a young man, even if he is fighting fit, is held to be doing more important work in his own village than on any front.

No one applauds the merits of "escape" literature more heartily than myself, but carried to these improbable lengths there is something that is not only a little embarrassing, but a little shamefaced.

IMSHI (Allen. 10s. 6d.) is the record of a fighter pilot in the Middle East, as told through his letters to his mother, and these letters have been collected and edited by Miss Alys Myers. Ernest Mason was an ace fighter-pilot who was killed in action in Egypt in February last year. His brother officers in their tributes to him, which form the book's epilogue, speak particularly of his dash, his initiative and his enthusiasm. Typical of these qualities was his reaction to Malta. "He liked the place, I think," wrote one of his colleagues. "There was plenty of action, which was probably an attraction for him." Plenty of action was just what Squadron-Leader Mason relished. He fought over Libya, over Malta and in Iraq, but it was for his exploits in the skies above the Western Desert that the R.A.F. remember him best.

His letters are curiously boyish in their lack of any introspection. He was first and foremost a man of action, and his relaxations were the simple and hearty ones of such a man. In his letters you will find, next to an account of a thrilling air engagement, a recipe for Chicken à la King, "really a marvellous dish," and a visit to Cairo on leave automatically includes "swinging" a saxophone in a dance band.

Imshi must, amongst many other things, have been an exceptionally agreeable young man. I have seldom read letters which reflected that more clearly.

Miss Eve Orme has written a romance of a type which is no less satisfactory for being definitely old-fashioned. FIRST LIGHT (Rich and Cowan. 8s. 6d.) has all the classic devices of jilted lovers, lovely country houses and nick-of-time denouements, but they are handled with such conviction that they become really credible.

Miss Orme seems to know a good deal about army life; at least, her references to its exigencies have an authentic ring, and since her book has wartime England as its setting, it provides many opportunities for an appropriate use of such knowledge.

The tale of Victoria Grant and her two lovers may not have the greatest originality, but it has a real freshness in its telling, and a glimpse of real humanity in the development of its central idea which makes its appearance very welcome.

Miss Agatha Christie has resorted to the classic strategem of poison-pen letters in her new mystery story, THE MOVING FINGER (Crime Club. 7s. 6d.). A young airman, Jerry Burton, and his sister, Joanna, choose a placid country house in which to stay for a few months while he recuperates from a bad crash, and she tends him. They soon discover, however, in the manner of all persons destined to be implicated in one of Miss Christie's plots, that the backwater has its undercurrents, and that the results of these are swift, sinister and murderous.

A series of letters, anonymous and vilely defamatory, stir up the neighbourhood, which is further shaken by the deaths of the local lawyer's wife and her maidservant. These murders are eventually traced to the lawyer himself, but not before the necessary complications have arisen and been dealt with.

This could be labelled as "a good Christie," though possibly not in the Roger Ackroyd class. All Christie fans will undoubtedly purchase a copy of this new mystery yarn.

THE MAN MISS SUSIE LOVED (Heinemann. 12/6) is an American novel, 560 pages long, dealing with the beginnings of the great Johns Hopkins Hospital in Baltimore in the last century. Miss Augusta Tucker has written what is not only a very long book, but an essentially readable one. She has given the reader a lively picture of Maryland society after the Civil War; she has exposed equally vividly some of the squabbles and dissensions which were a background to the establishment of one of the United States' greatest medical experiments, and she has given the whole a setting of romance which many magazine writers might emulate.

Nevertheless, there is in my opinion no particular or valid reason why this vast tome, worthy in itself, should have been published in this country during the present extreme shortage of paper.

THREE NEW PICTURES FROM SPAIN

FRANCO'S DAUGHTER AT AN ANDALUCIAN FESTIVAL: Carmencita Franco, seventeen-year-old daughter of the General, at the traditional Sunday parade of the Seville Feria during her father's recent tour of the Province

THE LADY MARIA DEL ROSARIO CAYETANA, seventeen-year-old daughter of the Duke of Alba, Spanish Ambassador to London and one of the richest men in Europe. Her coming-out Ball in Madrid was attended by nearly 2,000 guests and was the outstanding social event of Spain for many years. This picture was taken as she watched a bull-fight in the Ring at Seville a few days after her Ball

GENERAL FRANCO ACKNOWLEDGES THE CHEERS OF THE FALANGE. He is standing at a balcony window of the Alcazar at Seville, his official residence during a recent visit to the Andalucian capital. Members of the pro-Nazi Falange were gathered to greet him in the courtyard below

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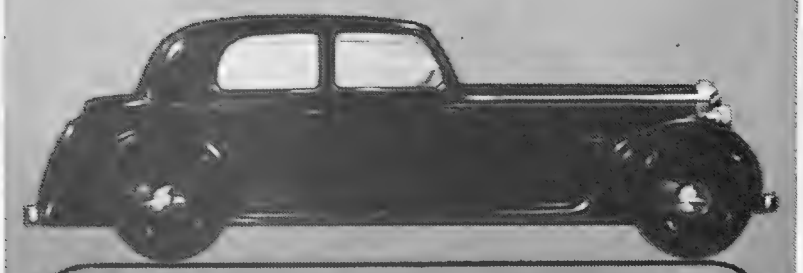

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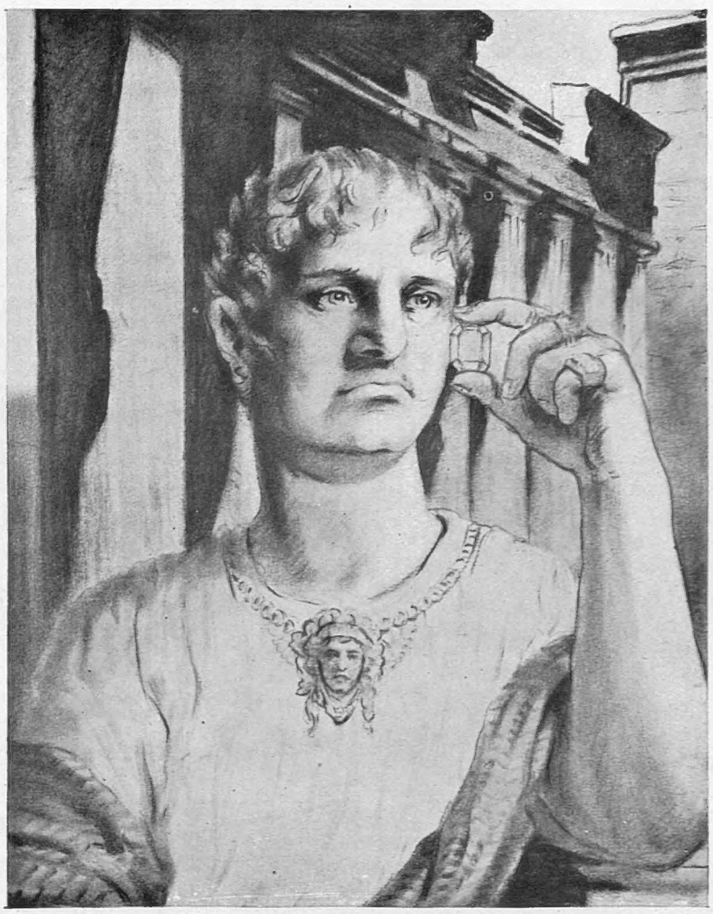

THE Roman Emperor Nero is said to have used a finely polished emerald as an eyeglass. In his day aids to eyesight must have been rare, but to-day many of us wear spectacles for one purpose or another. Yet our pince-nez, lorgnettes, monocles, or "horn-rims" form only a small part of the optical glass industry, the products of which are as various as they are important in War as in Peace. Industry needs microscopes, spectrophotometers, polarimeters, refractometers, photometers and pyrometers! The fighting services need lenses, prisms and mirrors for range and height finders, gun sights, cameras, field glasses, sextants and submarine and tank periscopes. When war broke out in 1914, more than 90 per cent. of optical glass required by Great Britain had to be imported from Europe. The result was a serious shortage but British chemists, physicists and glass manufacturers set to work with such energy and resource that not only was the immediate supply problem solved, but British optical glass is to-day equal to that made anywhere in the world. Only chemical ingredients of the utmost purity satisfy the makers of our modern optical instruments and apparatus. The manufacturing processes demand the most accurate scientific control by the physicist and chemist. It is in large part due to the British chemist that you, perhaps, are able to read this type, or a British camera to take air photographs of the damage done to an enemy vessel by a torpedo sighted through the periscope of a British submarine.

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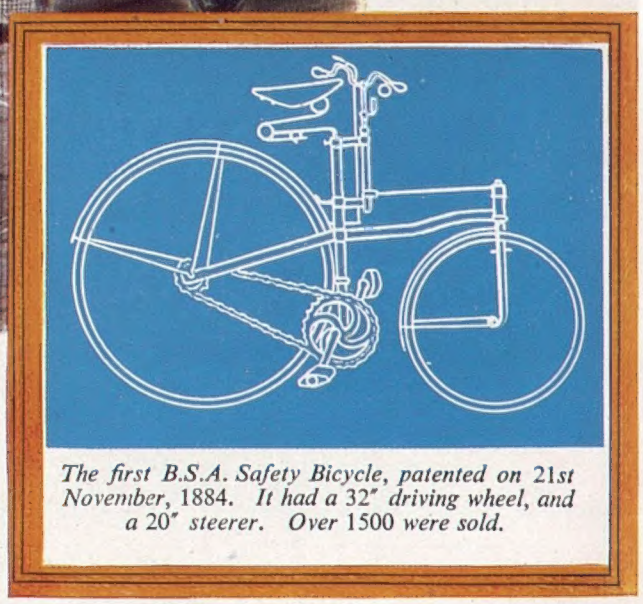

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